IOWA CONSERVATIONIST

JANUARY/FEBRUARY 1999

DEPARTMENT OF NATURAL RESOURCES

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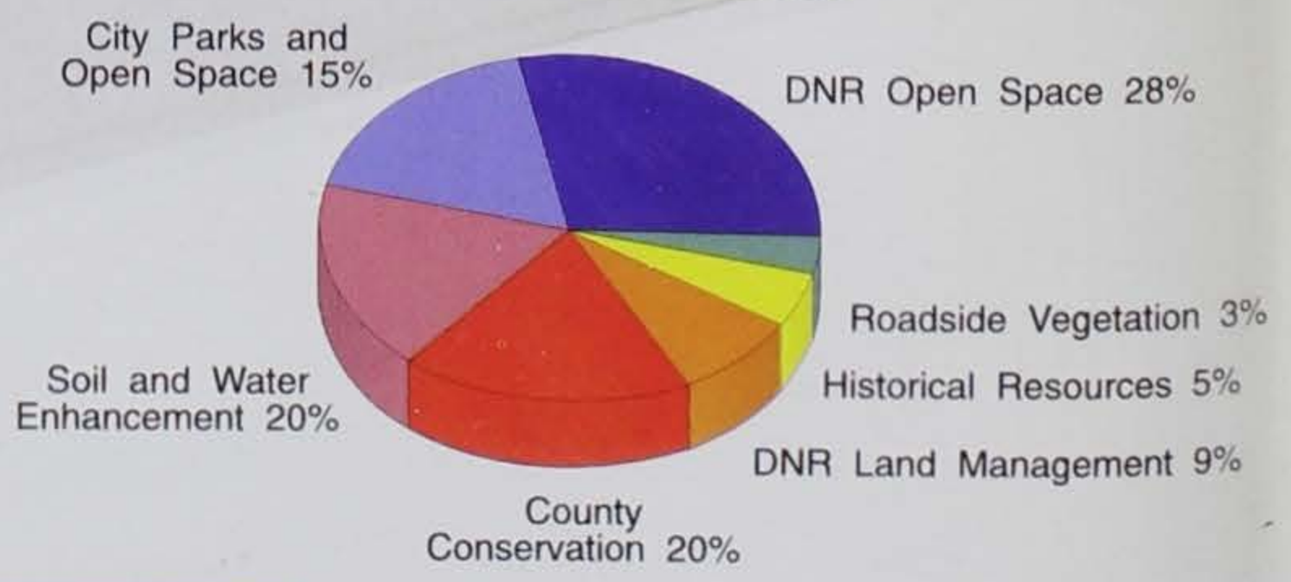

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COVERS

FRONT — Winter woodland buck by Roger A. Hill
BACK — Cottontail in snow by Roger A. Hill

FEATURES

DEPARTMENTS

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A Vision for the Future

1998 Energy Award Winners

The Department of Natural Resources proudly presents the 1998 Iowa Energy Leadership Awards, recognizing outstanding innovations in energy efficiency and renewable energy in the state.

This year's winners share an uncommon vision for the future, while living and working in common environments.

Among the hundreds of school districts, university organizations, communities and home builders in Iowa, the four winners -- representing each of these groups -- are demonstrating the economic and environmental benefits that come from wise energy management.

They are doing so for business development, educational and environmental reasons. Whatever the motivation, their efforts are leading the way to building a sustainable energy future in Iowa. That vision for the future makes this year's winners true leaders in the development of renewable energy and the advancement of energy efficiency.

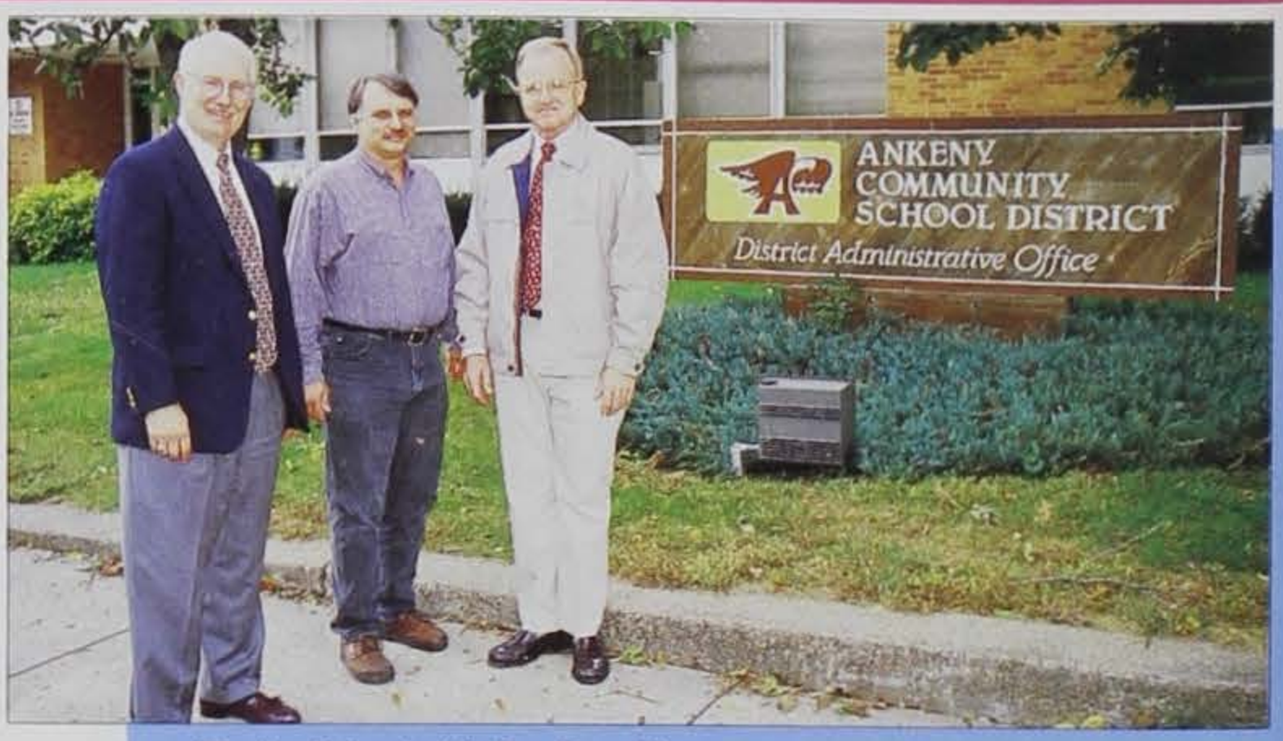
To each of the 1998 award winners, congratulations and thank you.

Article by Julie Tack
Photos by Kenneth Formanek

Every Effort Counts
Ankeny Community School District

How many schools in Iowa — much less the nation — have a full-time facilities *energy* manager? Ankeny Community School District does, and it's one of many efforts the school system is making to conserve its resources by saving energy.

Ankeny's incentive for achieving



■ **(Left to right) Dr. Ben Norman, superintendent, Ted Godlove, facilities energy manager, and Steve Drake, director of support services, oversee the school district's facility operations.**

nergy efficiency is grounded on ducational principles. According to Dr. en Norman, superintendent of Ankeny chools, "Energy use is a facet of ducation. The less of our educational ollar that goes toward energy, the nore it can go where it's supposed to — he students and teachers."

A Long History

Work toward understanding the istrict's energy use began more than 0 years ago, during the energy crisis of he 1970s. When the district realized ow much money was being allocated oward utility bills, it started imple- nenting small changes in its buildings. mprovements like weather stripping nd insulated windows were the first of nany proactive steps to improve fficiency. Soon, every decision about chool facilities included energy use as factor.

As building energy management rew, so did the number of outside ontractors and service companies being aid to install and monitor heating, entilating and air conditioning quipment. The district realized it vould be more cost-effective to hire a ull-time facilities energy manager.

Ted Godlove, facilities energy manager for the district, said, "My goal is to provide the optimum level of comfort and the most efficient use of energy at the least possible cost." Godlove is responsible for handling all new energy improvements, overseeing daily operations of HVAC equipment, and managing comfort levels at each of the nine schools in the district. He even has a computer that lets him monitor energy use and control equipment operations from his home.

■ **Teachers work in a comfortable environment, due to efficient heating and cooling, new T-8 lighting and insulated windows.**

Partnerships

The school district is able to track almost $130,000 in utility company rebates and has worked in partnership with the Iowa Energy Center and other local energy-conscious consultants to improve lighting, heating and cooling systems. The district's most recent project is a new geothermal heat pump system retrofitted to an older elementary school. The system provides both air conditioning and heating less expensively than the previous heating system. Work is underway to install additional heat pumps at two elementary schools and a middle school.

Another example of past energy efficiency projects is the replacement of every light bulb in the entire district with T-8 lamps.

■ **Construction is beginning on the second of four geothermal heat pump systems within the district. This one is located at an elementary school.**

It's All About Comfort

An important goal in energy management for the district is to ensure that teachers and student are comfortable. Superintendent Norman said, "Comfort level plays an important part in the learning environment." Marcy Sparks, principal of Northwest Elementary, agrees. "At the end of the day, teachers and students feel refreshed. They are able to remain excited all seven hours of the learning day because they aren't exhausted from the heat."

Outside the school day, buildings are used for thousands of hours each year by community organizations. "We want our taxpayers to be getting the most for their money," said Norman. "We want to serve our community *and* our students, and we are finding ways to make that work."

Dr. Norman shares his district's experience in building energy management with other schools in Iowa. Ankeny Community School District is teaching that every step to maximize energy use can make a difference, both in cost savings and how well students perform in the classroom. It's a perfect example that when it comes to energy efficiency, every effort counts.

The Times They Are A'Changing

The Center for Global and Regional Environmental Research

■ **Founded in 1990, The Center for Global and Regional Environmental Research (CGRER) is located in the Advanced Technology Laboratory at The University of Iowa. Funding for CGRER is provided through an assessment on the total gross operating revenues of Iowa's investor-owned utilities.**

The juts and curves of the strangely shaped metallic building are almost blindingly bright on a sunny afternoon. The building that houses the Center for Global and Regional Environmental Research (CGRER), located in the heart of The University of Iowa campus, is a modern phenomenon amidst an otherwise traditional collegiate environment.

The building, like CGRER, represents a change in times for both the university and the state of Iowa.

Breaking Down Barriers

Founded in 1990, the mission of CGRER is to study regional and global environmental change by drawing on the expertise of researchers from varied disciplines. Currently, 66 faculty members from fields such as science, engineering, medicine, law and humanities work together to understand global change. This interdisciplinary approach is quite unique.

Jerry Schnoor and Gregory Carmichael are co-directors of the organization. "CGRER is working to break down traditional university barriers and bring people together," said Schnoor.

Why?

The Human Touch

"Global change is not just an environmental issue," said Schnoor. "We want to be experts on the human element." Understanding how social norms and cultural activities play a role is critical to research efforts.

With the goals of helping to shape policy, providing data for well-founded decisions among industries and governments, and creating educational opportunities for Iowa's students and citizens, CGRER is a beehive of scientific and technological activity.

Energy's Impact

At the center of this activity is understanding the complex and intregral role energy has in affecting-global change. Reaching all corners of

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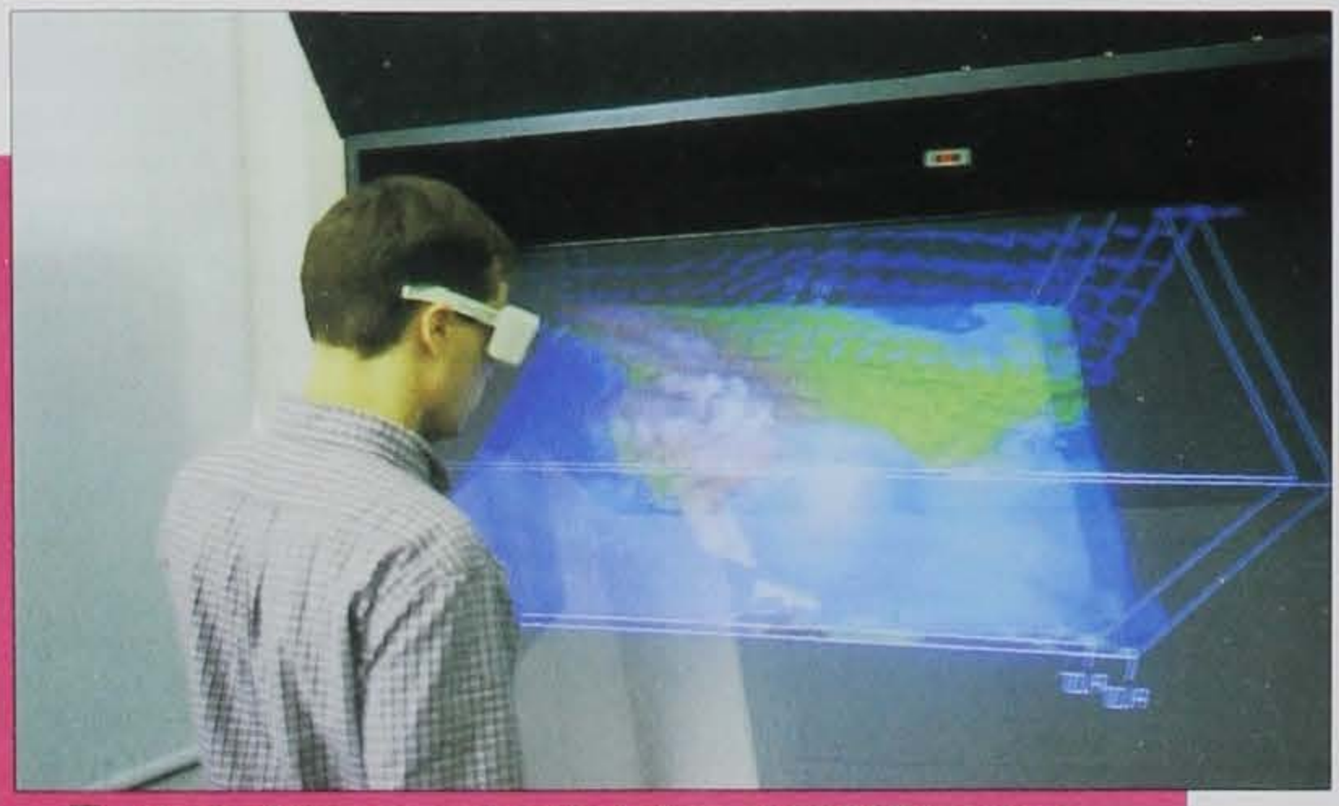

■ **Much of the research taking place at CGRER involves computer modeling. This ImmersaDesk displays data in a three-dimensional format, requiring special glasses for viewing.**

Neighborhood Know-How Rebuild Webster City

Street after street of perfectly maintained homes. New public buildings. A freshly constructed bike path winding through town.

Webster City residents know how to make their community a better place to live. It just took energy efficiency to help them gain national attention for their efforts.

The U.S. Department of Energy's (DOE) Rebuild America program helps communities decrease energy costs while improving quality of life and local economies. When Webster City heard of the program, town members were excited to join. "We saw this as a new tool for economic development," said City Manager Teresa Rotschafer.

The Beginning of Success

Rebuild Webster City was established with assistance from the Department of Natural Resources and the Webster City Municipal Utility. The Des Moines-based company, The Energy Group, worked with community leaders to develop strategies for reducing the entire town's energy consumption by 30 percent.

The municipal utility and The Energy Group spearheaded efforts by creating a Rebuild Webster City home office on main street, along with an "energy store" where consumers can buy energy-efficient equipment sold locally at lower prices. Additionally, local contractors agreed to contribute two percent of all project costs back to the program, in exchange for free marketing and work on projects associated with Rebuild.

■ (Below) Frigidaire is one of several local businesses saving money through energy efficiency. The appliance company has made more than $4 million in improvements.

■ (Above) A model energy home demonstrates energy efficiency.

■ A new bike path in town demonstrates neighborhood know-how.

■ Webster City's new fire department saves energy while helping firefighters save lives.

Outstanding Results

To date, $50,000 of DOE funding has resulted in $4.5 million in energy

Continued on page 9

The Competitive Edge

Skogman Construction Company

Home construction is a competitive business. With hundreds of builders in Eastern Iowa alone, any advantage can help a construction company increase its business success. For Skogman Construction Company, that new competitive edge is energy efficiency.

As a fifth-generation company in the Greater Cedar Rapids/Marion area, Skogman is one of the largest builders in the state, producing between 100 and 130 new homes each year.

Setting a New Standard

In 1997, the construction company made the business decision to build every home to the Energy Star® standards established by the Environmental Protection Agency. This commitment makes Skogman the leading builder of energy efficient homes in Iowa, exceeding the Model Energy Code by at least 30 percent.

Drew Skogman, vice president of Skogman Construction, said that while the company has always had an interest in energy efficiency, its new program got off the ground with the help of MidAmerican Energy.

"They [MidAmerican] saw we were already including many of the construction techniques that would help us meet the Energy Star® standards," said Skogman. MidAmerican's Energy Star® New Home program provides a "road map" for how a builder can make a home more energy efficient.

Skogman's homes also have been evaluated by the Home Energy Rating System. All of the company's new homes have earned a rating of four stars or better on a five-star scale, with a minimum score of 86 (the average in Iowa is 74.1 on a 100-point scale).

Family Appeal

To date, more than 60 families have purchased Skogman's energy-wise houses. One of the greatest benefits to these families is the cost savings associated with energy efficiency. According to MidAmerican Energy, estimated energy cost savings exceed 20 percent, which equals $30 to $45 per month for the average homeowner. "Energy efficiency is another factor that makes our homes appealing," said Skogman.

■ **An important building technique is ensuring top-notch wall, ceiling and basement insulation.**

Tried and True Techniques

The company's construction techniques include high efficiency windows; improved heating, cooling and hot water systems; and setback thermostat controls. Most importantly, Skogman concentrates on limiting air infiltration. "When you turn on the heat in the winter, it's as if the house inhales," said Skogman. "The furnace is sucking in air from the outside." Higher insulation values in basements, walls and ceilings, along with sealed ventilation ducts, help control air filtration.

Additionally, homes built by Skogman provide greater comfort, lower the cost of a home over its entire

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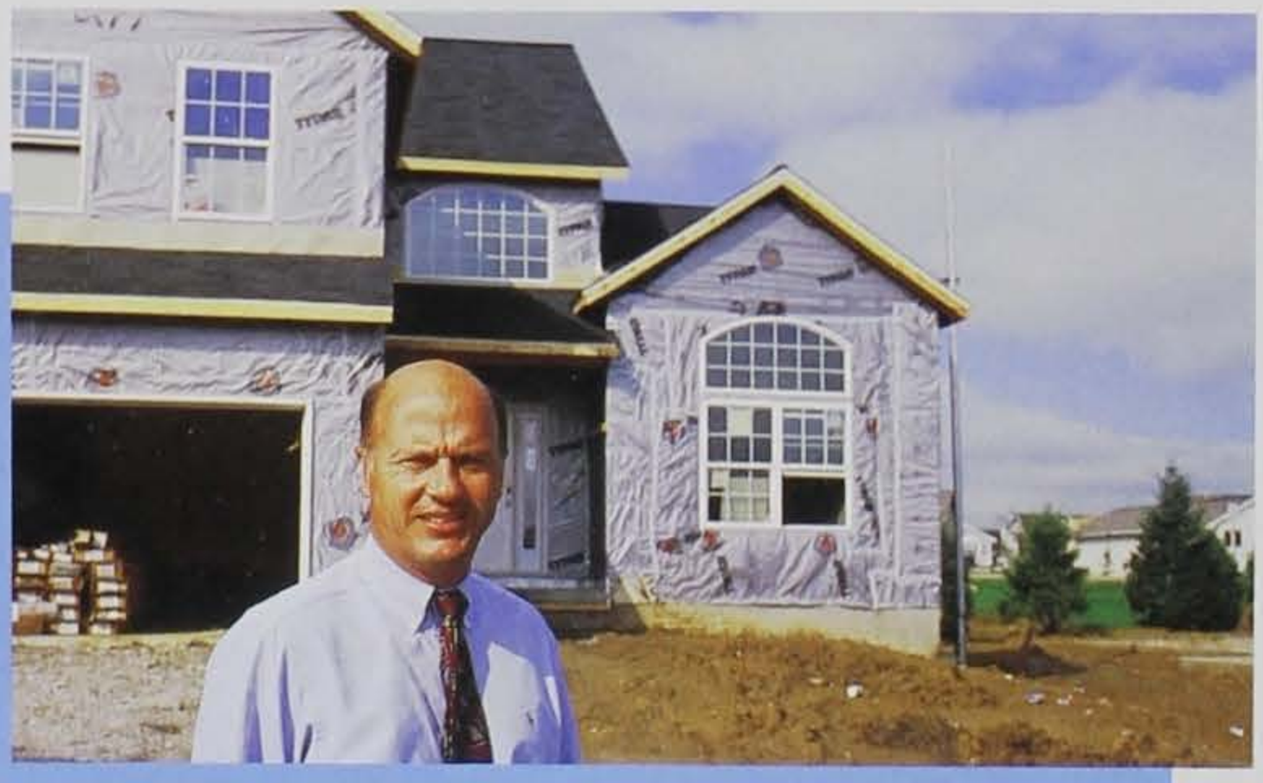


■ **Drew Skogman, vice president of Skogman Construction, shows one of the homes his company is building in Cedar Rapids, built 30 percent more energy efficient than Iowa's Model Energy Code requirements.**

■ The finished product, one of Skogman's 100-130 homes built each year.

lifetime, and help improve the environment.

With Skogman Construction Company concentrating on better energy management in its homes, other builders will probably soon follow. "We are educating homebuyers about energy efficiency. Buyers will ask other builders, and those builders will need to act," said Skogman.

Incorporating energy efficiency into its home building techniques is an important reason why Skogman Construction Company is earning a competitive edge in eastern Iowa.

Rebuild Webster City, continued

improvements, and almost $550,000 in annual savings.

Public facilities, churches, schools and private businesses have all implemented energy efficiency improvements. From the city fire department to the largest employer, Frigidaire, 20 organizations have jumped onto the energy efficiency bandwagon.

Funding to pay for improvements is available through the utility and a local bank. Participants can pay back loans as part of their utility bills.

Projects included a new geothermal heat pump system in the middle school, which now serves as a model in Iowa.

National Award

Through the strong cooperation and commitment between the town's private and public sectors, Webster City earned national attention when it won the DOE's National Rebuild Partnership of the Year award in March 1998. Webster City was chosen from 160 community participants across the country for its outstanding initiative and achievements.

U.S. Dept. of Energy
Rebuild America

Down the road, Rebuild Webster City plans to make nearly $10 million in improvements by the year 2000, with annual energy cost savings of $2.5 million. As a result the town also will gain a healthier environment.

With each new success, town members exhibit a modest pride in what they have achieved. "We're a quiet success story," said Rotschafer.

In many towns across the United States, that claim may not be quite as easy to make. But in Webster City, the statement is fully backed by neighborhood know-how.

Center for Global and Regional Environmental Research, continued

the world, CGRER is studying the relationships among energy, the environment and the economy. From working with China on its energy demand, to discussing agriculture practices with Iowa's farmers, members of CGRER see renewable energy and energy efficiency as strong elements for affecting global change.

■ Dr. Jerry Schnoor, co-director of CGRER, leads faculty in understanding energy's relationship to the environment.

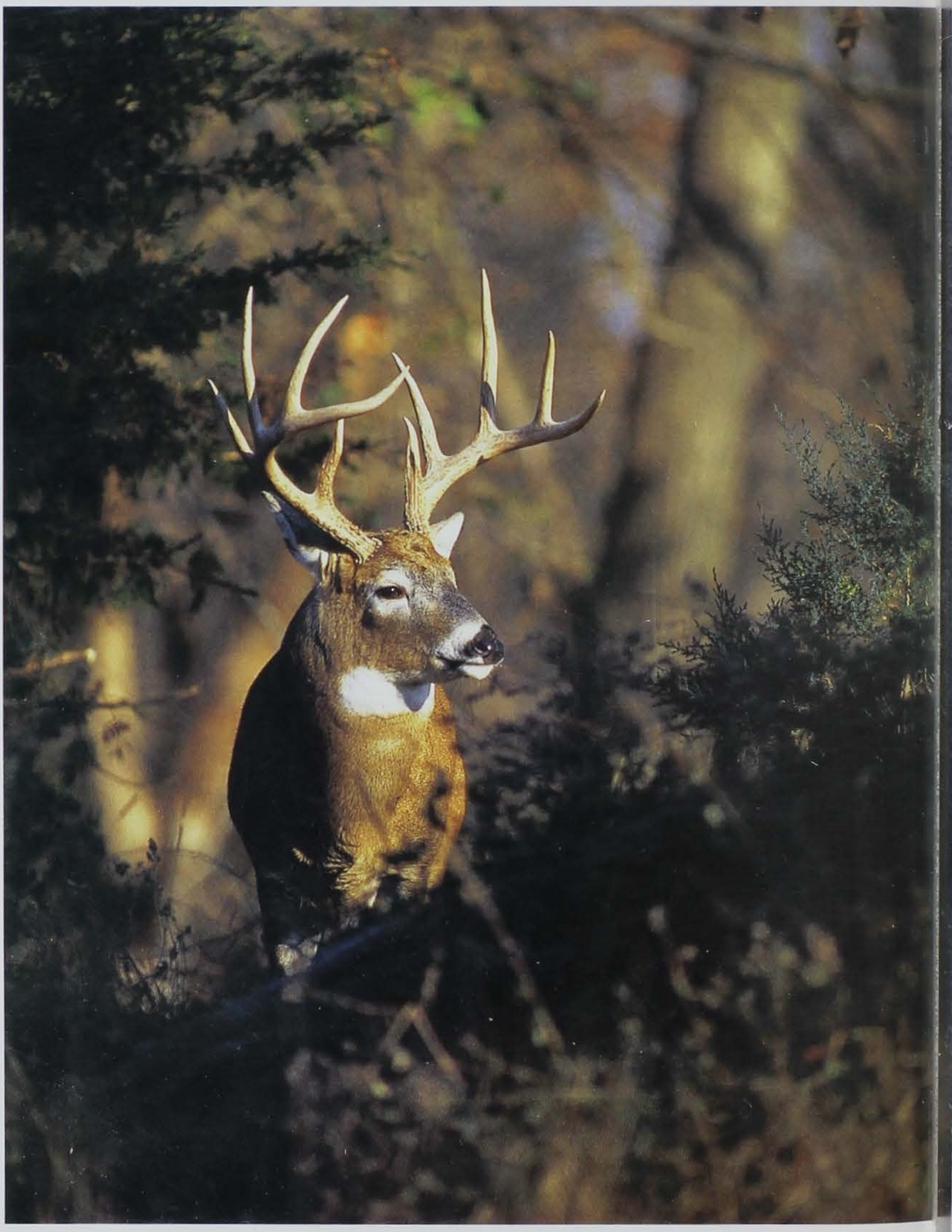
Examples of the organization's energy research projects include:

♦ The Iowa Greenhouse Gas Action Plan. The Plan makes recommendations on how Iowa can reduce its air emissions, save energy and provide for renewable energy resources.

♦ An analysis for the Iowa Utilities Board, in conjunction with the Iowa Energy Center, on how a deregulated electric utility industry will affect air emissions in the state.

♦ The planting of hybrid poplar trees in Amana to demonstrate the energy benefits of using riparian zone buffer strips to improve water quality. Poplars can replace propane for corn drying and heating out-buildings.

"Our goal is to improve efficiency and save emissions while bolstering the economy," said Schnoor. As a premiere energy and environmental resource center for the state and nation, CGRER's work will help Iowa's energy perspective change with the times.



A Closer Look At Iowa's Trophy Class

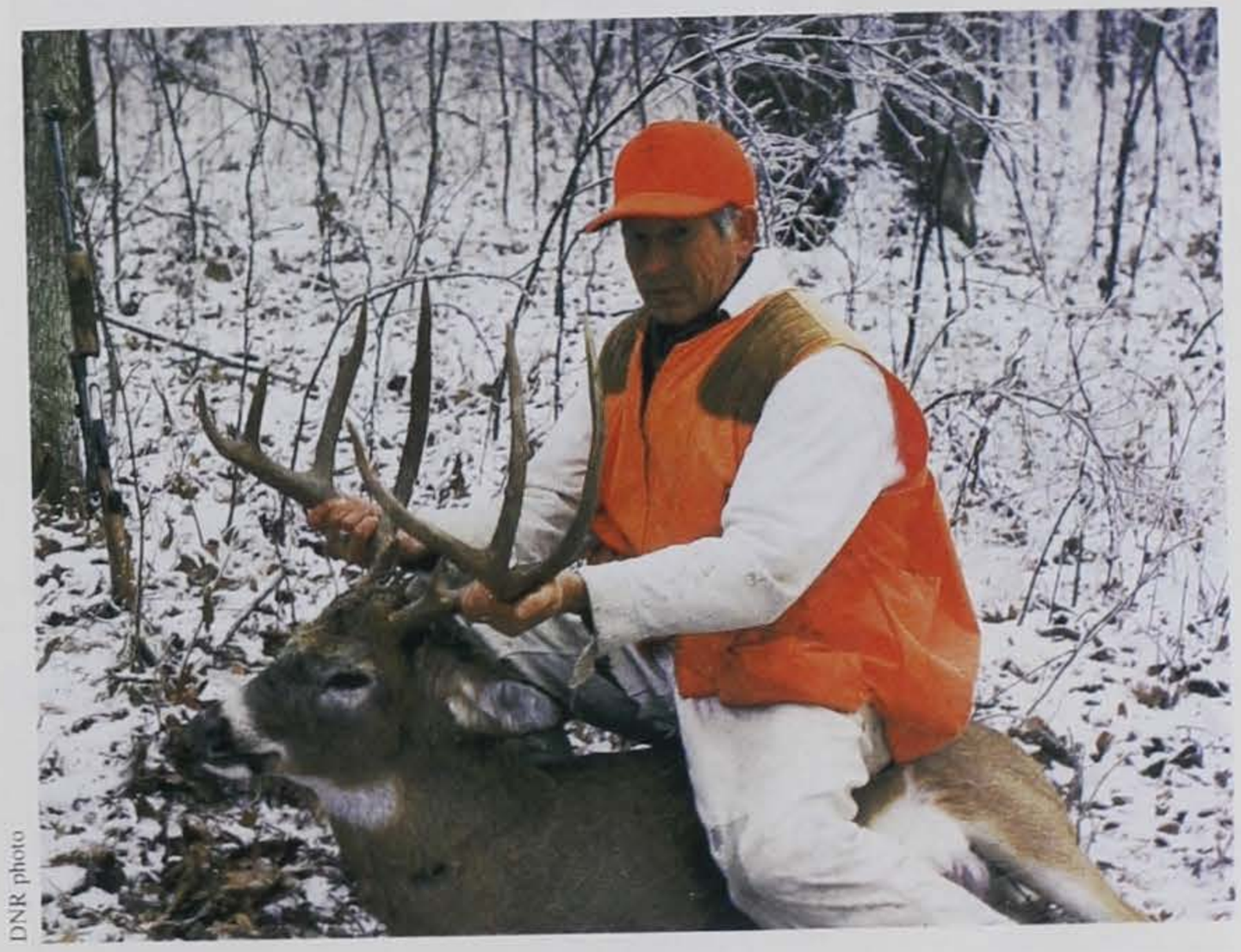
Article by Richard Bishop
Photos by Roger A. Hill

The 1997 Iowa deer season was a record breaker. A record number of deer were harvested (118,400) and a record number of permits were issued (211,118). This equates to the most recreational deer hunting opportunity ever afforded Iowans.

Included within this harvest is a large number of high-quality antlered bucks. Many photos of nice bucks are on refrigerator doors, bulletin boards, sports shop walls and office desks, showing the happy faces of numerous Iowa sportsmen and women. This was not a random happening, but the culmination of years of research, surveys, public meetings and hard management decisions. Everyone interested in the deer resource should know more about how and why we arrived at this point. More important is the possibility we could lose what we are now enjoying.

In 1972, Iowa hunters harvested about 14,000 deer through 37,000 permits issued. By 1980 the harvest rose to 22,000 deer and the number of permits issued to 92,700. During the late 1970s, we held numerous public meetings where interested sportsmen, sportswomen and farmers provided direction to the department. Many requests were received but the most consistent were: landowners and tenants wanted an any-sex permit for their free farm license; people wanted multiple permits, longer seasons, more and bigger bucks, more any-sex licenses and more deer. After much deliberation on the requests, the Department of Natural Resources' wildlife bureau initiated a program to accommodate public desires. Meeting the requests required a much larger deer herd. The questions were how high should the population be and how would we get there.

The habitat carrying capacity for deer in Iowa far exceeds what we as a society are willing to tolerate. We have an almost unlimited food source and weather patterns are seldom severe enough to cause serious winter mortality. The only limiting factor to the deer



DNR photo

A trophy whitetail deer appears through an opening in the thick undergrowth of an Iowa timber. Iowa is quickly becoming known as one of the top trophy deer hunting states in the nation. Sound management plays a major role in producing trophy-class deer. At right, author Richard Bishop with a trophy nontypical whitetail.

population is landowner tolerance.

Iowa's deer management is now based on that factor. There is a point where crop damage exceeds what is reasonable for farmers to endure. This point is often difficult to determine because people have very polarized views when it comes to deer numbers. Some feel we should have more deer while others feel we have far too many.

To increase the deer herd, we needed to reduce the mortality rate on does. In some zones or seasons, hunters were required to shoot only bucks. In other zones or seasons, a limited number of any-sex permits were available. The end result was more people would be required to shoot antlered deer to allow more does to survive. A gradual increase was planned to approach a level of equilibrium among stakeholders.

During the 1980s, we started to see our efforts bear fruit. Restrictions on doe hunting were moderated and the number of permits issued increased, as did the deer kill. By 1988 the number of permits issued was at 166,500 and the harvest reached 93,750.

However, the number of agricultural complaints regarding deer damage to corn and soybeans, as well as orchards and tree farms, also increased. It became evident a deer population which would sustain an annual harvest of between 90,000 and 100,000 would be a compromise of everyone's interest. For some, the harvest level was too high; for others, too small.

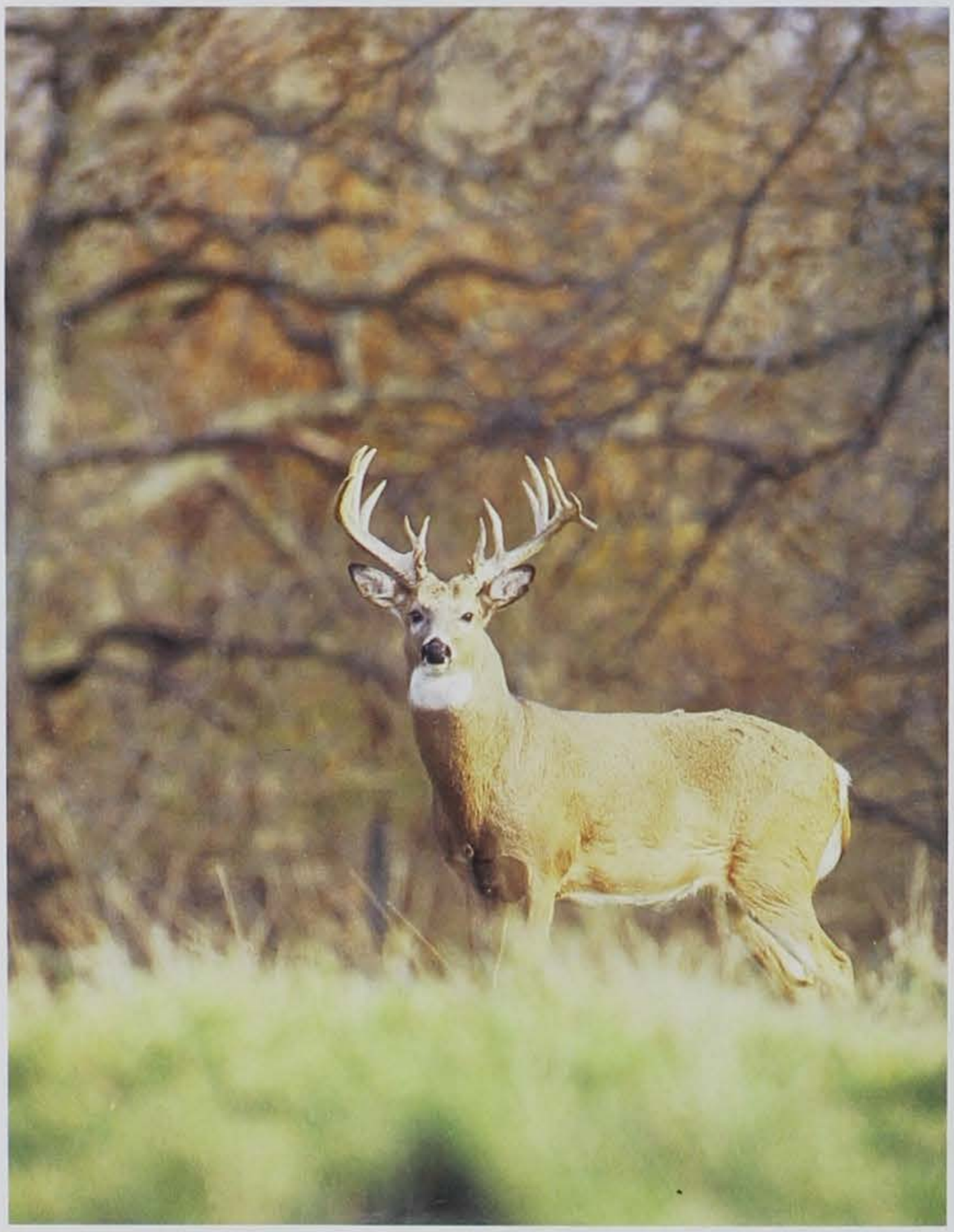
Since 1988, we have seen annual harvests ranging from 76,000 to 118,000. The initial goals stated by those citizens who provided guidance have been achieved. We increased the deer population as requested. We provided any-sex permits for all landowners and tenants applying for free licenses. To spread out hunting pressure and reduce conflicts among hunters as well as hunters and landowners, separate first and second shotgun seasons were enacted. This also offered a choice in hunting time.

Special muzzleloader seasons, one early and one late, were added. Multiple permits became available, allowing a person to buy as many as five or more licenses depending on the time and place. Hunter success rates increased for both archery and gun hunting. Quality deer are now numerous and available across the entire state. In fact, Iowa is billed as one of the top states for trophy whitetails.

Extensive work and planning

Present opportunities did not happen by accident but were the result of extensive work and planning. Trophy management is difficult to achieve because most people want to harvest a deer regardless of its sex or antlers.

If you ask a deer hunter, most would prefer to shoot a buck, preferably a big one. If a big buck does not present itself, most hunters will shoot any buck. If no bucks are available, most hunters will shoot a doe rather than not take home a deer. The fact is, most hunters simply want to shoot a deer. Biologists

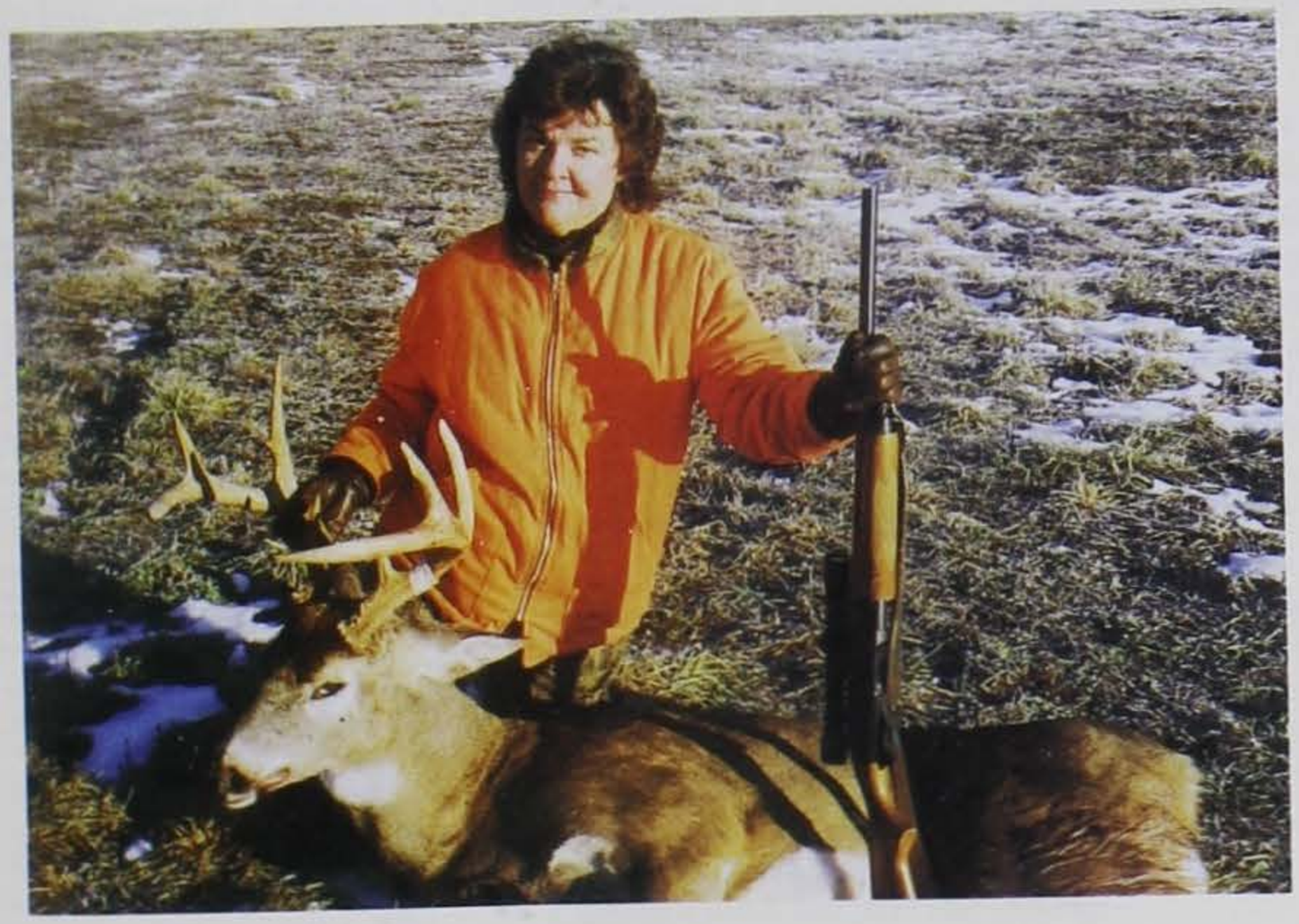


A trophy nontypical Iowa whitetail (left) crosses an open field. A buck (upper right) eyes its surroundings as it leaves the security of the timber. Judy Bishop (lower right) poses with a trophy Iowa deer.

struggled with this dilemma before realizing in order to provide quality bucks, a large number of bucks were needed each fall to ensure carryover to the next year.

A basic biological fact is bucks come from does, and the only way to have a large number of young bucks is to have a large number of does. The success of Iowa's trophy program depends on providing an overwhelming number of deer for hunters. This philosophy has worked well.

On the other side of the equation, as deer populations decline, fewer young bucks are produced and a higher percentage of available bucks are shot, resulting in fewer bucks growing a year older. This results in hunters shooting the first buck they see and soon there are few yearling deer surviving to become older and bigger. If we had more hunters like Minnesota or Wisconsin, the hunting pressure would further depress the number of bucks living three-plus years. We are fortunate Iowa's hunter numbers are in line with a deer population that landowners can tolerate. Indeed, our quality deer are no accident but future success depends on maintaining a relatively high deer population.



DNR photo

Present management decisions

What is the optimum manageable deer population level? To address agricultural concerns on the optimum deer population level, we cooperated with the Farm Bureau and conducted a survey of landowner attitudes. The survey was done by Iowa Agricultural Statistics. They split Iowa into five regions and contacted farmers in each region. Results of this survey were broken down into regular farmers and specialty farmers. Of regular farmers, 34 percent reported no damage, 16 percent had insignificant damage, 28 percent said the damage was reasonable in exchange for having deer and 21 percent indicated damage was unreasonable.

Specialty farmers felt deer numbers were generally too high with 32 percent saying damage was unreasonable, 23 percent believing it was reasonable and 42 percent having insignificant or no damage. In summary, farmers were virtually split in thirds with 38 percent wanting deer numbers to stay the same or increase, 35 percent wanting a slight decrease and 30 percent wanting a substantial decrease.

Manipulating deer numbers significantly in either direction would create considerable dissatisfaction with the public. The DNR feels the 1997 population level is slightly above the statewide level that best fits a compromise between those favoring more or present numbers and those wanting fewer deer. In other words, we believe if we reduce the deer numbers slightly and then stabilize the population we will be where we should be on a statewide basis. This would allow us to maintain numbers desired by hunters and wildlife viewers while addressing the needs of agriculture.

This magical level is like our landscape – gently rolling but with some areas flat, and others hilly and rough. High deer numbers exist around some state and county parks, and on blocks of private land where landowners allow little or no hunting. Some deer hunting parties, including landowners, often shoot only bucks and some landowners do not allow others t hunt. Consequently, deer numbers are going to increase. In park areas where deer numbers are high, we need to include hunting as a management tool to reduce the population. This has worked at Springbrook, Lake Darling and Viking Lake state parks.

Private landowners also need to require hunting parties shoot does on their land, and in some cases, increase the number of hunters by allowing people to hunt in all gun seasons. Certain areas with limited habitat do not have the deer numbers some peopl would like to see. In these portions of the state, we probably will never satisf the demand for deer. The challenge th department presently faces is to decrease deer in problem areas withou destroying the deer population in othe areas where numbers are currently considered about right.

Presently we have two depredatio biologists working to address landowner concerns. Additional shooting permits are offered to landowners having more than $1,000 in crop damage and wanting to reduce the number of deer on their farms. These permits are sold to hunters having permission to hunt on the farm unit.

A trophy whitetail (left) taken by bo and arrow. A buck (right) cautiously makes its way through the timber.

This present program is working well and will return results in the way of fewer deer if the landowner or tenant continues with the plan for at least three years.

Kill permits are issued to those people raising high-value crops once alternative measures are deemed unsatisfactory in solving the problem. Addressing individual situations can maintain numbers where deer are wanted and reduce numbers in areas where crop damage is deemed excessive.

A glance to the future

Under the current agricultural system, it is doubtful we can maintain deer numbers at levels as great as those we are now experiencing. Our management goal is aimed at reducing the deer population slightly and then trying to maintain it. Our present population level permits liberal seasons for bow, shotgun and muzzleloader with relatively high hunter success.

The quality and number of Iowa bucks depends on producing a large number of buck fawns each year and having a harvest that allows at least one-third of the antlered bucks to grow one year older. The higher the percentage of antlered bucks surviving the season, the larger the number of quality bucks available in subsequent years.

Presently, we are harvesting more deer than the population can withstand and still maintain multiple permits and a large number of quality bucks. If we continue to receive public pressure to reduce the deer herd, we will see a much-reduced deer herd and hunting opportunities. What we have had in the past will be enjoyed by only a few people that manage their own private land to maintain deer numbers. There will always be hot spots where large deer numbers exist, such as near parks, cities or some private land, but in general, we will see far fewer deer.

Iowa is currently considered one of the top states for trophy whitetails. Land values have shot up and guiding operations have appeared. Big bucks mean big bucks in economic terms. Landowners are seeing bigger economic incentives to manage for deer rather than to get rid of them. While deer numbers are decreasing statewide due to political pressure, the future will be interesting with more emphasis placed on deer management by the private sector.

Richard Bishop is the chief of the DNR's wildlife bureau.

The number of deer licenses issued compared to the number of deer harvested per year from 1970 to present.

1999 Iowa Deer Classic

Some of the greatest whitetails ever taken will be on display when the 1999 Iowa Deer Classic comes to the Polk County Convention Center in Des Moines Feb. 5-7.

Billed as "The Greatest Whitetail Show on Earth," the classic will feature world record whitetail displays, including the most famous collection ever — Larry Huffman's "Legendary Whitetail Collection." Huffman's collection contains many of the greatest whitetails ever taken, including the Jim Jordan buck, the world record for more than 80 years; the Hole-in-the-Horn buck, considered by many to be the greatest whitetail ever; and the John Breen buck, the former world record typical deer.

The "Hall of Fame," a collection of the Iowa state record whitetails, includes the Lloyd Goad buck, a former world record; the Portwood buck, the Wayne Bills buck and the Larry Raveling buck. In addition, the Iowa state record typical elk and nontypical mule deer will be on display along with more than 200 Boone and Crockett-class bucks.

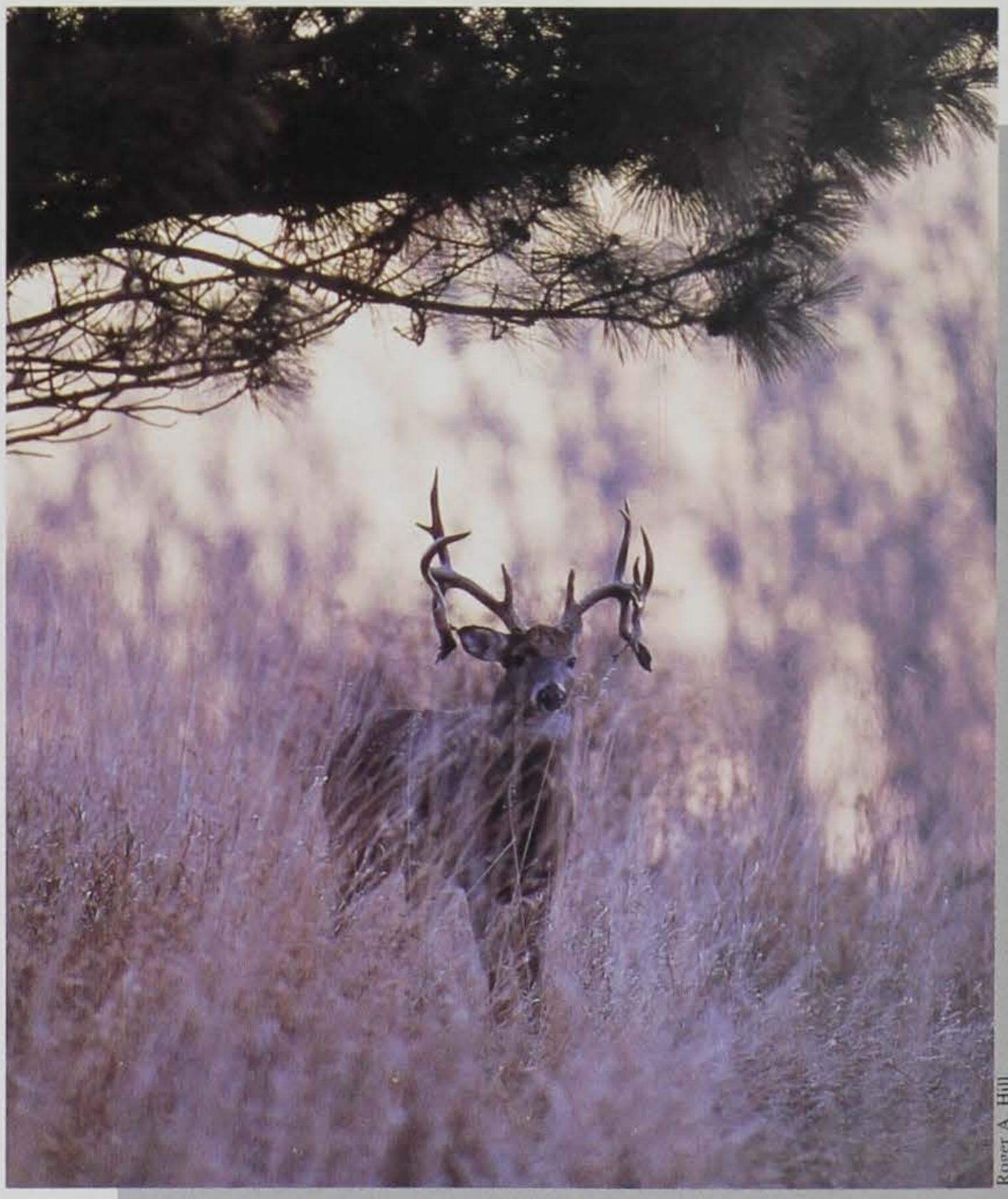
Hourly seminars will be held by leading whitetail authorities, bow hunters, authors and biologists. Trophy measurers will be on hand to score deer antlers for the Iowa state record book, Boone and Crockett, and Pope and Young.

The Iowa Deer Classic will also be the place to check out the latest in outdoor equipment, apparel and travel. Exhibits by leading manufacturers of outdoor equipment and apparel, archery and firearms, and four-wheel drives and all terrain vehicles will be displayed throughout the Convention Center.

Areas will be designated to test new equipment and sharpen outdoor skills. The Iowa DNR will also have a booth staffed by wildlife biologists and law enforcement officers to answer questions regarding deer populations, management and hunting regulations.

Thousands of dollars in cash and prizes will be awarded to top finishers in the Ironman Competition, a combination of several shooting events, as well as the Iowa Archery Championship. For the kids, the youth shooting village offers sling shot, air rifle and six-shot rubber band gun shooting events.

Hours for the show are 5 to 7 p.m. Feb. 5; 9 a.m. to 8 p.m. Feb. 6; and 10 a.m. to 5 p.m. Feb. 7.



Roger A. Hill

Iowa's Bottle Bill

by Amy Myers

Twenty years ago, mowing the ditches surrounding his fields was a big job for Charles Crim. Before he could even start the mower, he had to take time to pick up the assorted bottles and cans thrown out by drivers passing his farm. "I would usually pick up two 5-gallon buckets of cans, bottles and other garbage." The bucket is only half full now. Crim and countless other farmers are grateful for the bottle bill. In states with a bottle redemption law, farmers like Charles Crim save more than $37 million in damages to machinery, crops, livestock and lost time and wages because of less trash discarded in the ditches and fields by passing motorists.

Amy Myers

Kluckhohn Elementary kids collect cans to support "adopted" animals in the Orphaned and Injured Wildlife Center in Spirit Lake. The fifth grade class has donated more than $4,000 to the program

In 1979, the Iowa Legislature passed the Beverage Container Deposit Law, otherwise known as the bottle bill. Then Gov. Robert Ray envisioned the law as more than an anti-litter measure focused on cleaning up Iowa's roadsides and parks. In an editorial in *The Des Moines Register* on July 23, 1998, Gov. Ray wrote of the bill, "Our vision for Iowa went beyond cleaner roadways. It went to a better collective self-image, and a stronger sense of pride in ourselves." That vision came to fruition as the bottle bill is our most cost-effective recycling and waste reduction effort.

After 20 years, the redemption process seems like old hat to Iowans. Most families have a system in their household for recycling cans, glass and plastic bottles. A generation of Iowa kids has grown accustomed to saving beverage containers for the deposit money, to do otherwise would be contrary to good habit.

Fifth-grade students at Kluckhohn Elementary School in LeMars collect

1

The distributor charges 5 cents for each container delivered to the retailer.

2

The retailer charges you the 5 cents when you buy the product.

3

You get the 5 cents back from the retailer (or redemption center) when you take in empties.

4

The empties are picked up by the distributor who pays 5 cents plus 1 cent handling fee for each container.

Following The Nickel

"Our entire outdoor learning area – the split rail fence, trees, shrubs, raised garden beds, bird feeder stands, bird bath and several hundred dollars worth of supplies and tools were purchased over a several-year period solely with funds raised by collecting redeemable cans and bottles," says Kathy Gifford, Roland-Story Elementary school teacher.

cans to support "adopted" animals in the Orphaned and Injure Wildlife Center in Spirit Lake. The fifth-grade class has donated more than $4,000 to the program, and has collected enough money to donate to other conservation groups and educational projects as well. "The project has been a huge success for our fifth graders at Kluckhohn," says Tom DeKoster, Kluckhohn Elementary School teacher. "We starte with one collection box in our classroom, then added one in th lunchroom and several local businesses have collection boxes which support our efforts. We have enjoyed collecting cans f wildlife and are disappointed that we see so many cans and bottles are not Iowa refundable."

Several schools and organizations use the can redemption for fundraising. Roland-Story elementary students collect can to provide funding for their outdoor classroom. Students yiel about $600 a year. "Our entire outdoor learning area – the sp rail fence, trees, shrubs, raised garden beds, bird feeder stands bird bath and several hundred dollars worth of supplies and tools were purchased over a several-year period solely with funds raised by collecting redeemable cans and bottles," says Kathy Gifford, Roland-Story Elementary School teacher.

The bottle bill has become such a natural part of life, yet many aren't sure how the program works. The redemption journey starts when the distributor charges a nickel for each c or bottle sold to the retailer. The retailer passes the nickel charge along to the consumer when a product is purchased. The nickel is returned when the consumer brings the empty

bottle or can back. The distributor picks up the empties and pays a nickel plus a one-cent handling fee for each container. Grocers or redemption centers keep the one-cent handling fee, and deposits not redeemed by consumers remain in the distributor's coffers. Currently, every container of alcoholic liquor, beer, mineral water, soda water or carbonated soft drink sold in Iowa for consumption off the premises of the retailer is subject to a deposit of five cents or more. Retailers such as grocery or convenience stores must accept the redeemable empty container (free from any contaminates) of the same kind, size and brand they sell. The retailer gives the customer a refund for the container deposit paid by the consumer at the time of purchase.

The redemption process is simple because of grocer, redemption center and distributor cooperation. Their participation is an appreciated public service that helps keep Iowa beautiful – a great way to give back to the community and future generations.

The bottle bill is responsible for diverting more than one million cubic yards of aluminum waste from Iowa landfills – enough to fill the UNI-Dome more than 28 times. Even with this substantial harvest of cans, 20 years of less litter in Iowa's ditches, parks and landfills are under attack. Some would like the redemption system to be repealed and replaced with curbside recycling. The redemption sites at grocers and convenience stores make our current level of waste diversion possible. This redemption process is suitable for life in Iowa because rural citizens don't have the option of curbside recycling.

Iowans responding to a survey conducted by the Center for Social and Behavioral Research at the University of Northern Iowa agreed (92 percent) with the statement that the beverage container deposit law plus curbside recycling is the best way to decrease the amount of litter going to our landfills. National studies show a combined curbside-deposit program would remove, at a lower cost, more materials from the waste stream than would a curbside program alone. It's also evident deposit programs reduced the operating costs of curbside programs. Yet, if Iowa's bottle law was repealed and curbside recycling was the sole vehicle for recyclable collection, local agencies would be forced to pass along to consumers the substantial costs for routes, vehicles and personnel to enlarge existing collection systems. Unfortunately, only 50 percent of the population in Iowa currently have access to curbside recycling. Reaching the half without curbside pick-up would be difficult. It is estimated current waste hauling costs would increase by 50 percent to allow for curbside recycling expansion.

This increased expense is contrary to one of the most noteworthy aspects of the Iowa's current recycling collection system — the bottle bill uses no tax money to support the redemption process. Money generated from the purchase of the container keeps the program running. The self-sustaining deposit program allows for cost savings in litter cleanup and landfilling.

"Curbside recycling programs have expanded considerably in the past 10 years and we've all worked hard to make those programs available," says Liz Christiansen, recycling educational specialist for the Iowa Recycling Association. "But we've realized that curbside recycling may not be the answer for every part of Iowa."

"Our cities and counties are faced with providing increased services with

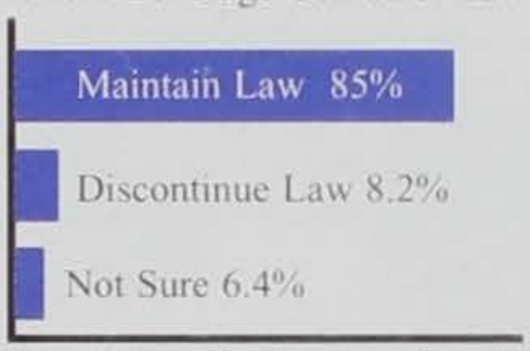
The redemption process is simple because of grocer, redemption center and distributor cooperation. Their participation is an appreciated public service that helps keep Iowa beautiful – a great way to give back to the community and future generations.

Statement	Percent in Agreement
There is less litter along Iowa's highways because of the beverage container deposit law.	93.5
Many parks and recreation areas in Iowa have less bottle and can litter because of the beverage container deposit law.	89.2
I believe there should be a national beverage container law.	73.9
A combination of the beverage container deposit law and curbside recycling is the best way to decrease the amount of litter going into our landfills.	91.7

Taken from results of survey performed by the Center for Social and Behavioral Research, 1998

The beverage container recycling law survey conducted at UNI confirms Iowans appreciate and want to keep the bottle bill. More than 85 percent of respondents want to keep the bottle bill as a part of Iowa's everyday life and more than 70 percent want to expand the types of redeemable containers included in the redemption law.

Iowa's Beverage Container Law



Taken from results of survey performed by the Center for Social and Behavioral Research, 1998.

limited budgets," Christiansen says. "The bottle bill crosses all boundaries to reach every Iowan, regardless of where and how they live."

In 1980, only one year after the bottle bill was signed into law, the Iowa Department of Transportation estimated a 38 percent overall reduction in roadside litter and a 79 percent reduction in bottle and can litter. As one of the 10 states with a deposit program in place, Iowa pulls more than its weight in the national effort to reduce waste and increase recycling. A study by the Container Recycling Institute showed 55 percent of all recovered beer and soda containers came from the 10 states with deposit container laws. These 10 states represent only 18 percent of the population in the United States. As Iowans watch visiting relatives and friends from states without the bottle redemption law casually toss a can in the garbage, a shriek often follows, "Don't throw that away. We return those for a deposit."

The beverage container recycling law survey conducted at UNI confirms Iowans appreciate and want to keep the bottle bill. More than 85 percent of respondents want to keep the bottle bill as a part of Iowa's everyday life and more than 70 percent want to expand the types of redeemable containers included in the redemption law. Iowans see results from the bottle bill; nearly 75 percent believe there should be a national bottle bill.

The same survey revealed nearly 90 percent of Iowans believe parks and recreational areas have fewer bottles and can litter because of the bottle bill. Iowans want the deposit law maintained because they believe it reduces the amount of litter along highways and causes more recycling to occur.

More than 96 percent of Iowans return deposit containers, according to the bottle bill survey. Of those, 30 percent returned cans and bottles for environmental reasons and 59 percent returned them primarily for the refund.

"One of the beauties of Iowa's deposit law is the strong economic incentive for people to walk our roadsides and pick up litter that would otherwise give the state a more littered appearance," says Larry Wilson, director of the DNR. "In states without a deposit law, only 25 to 30 percent of the bottles and cans are recovered for recycling. In Iowa, the recycling recovery rate for aluminum cans is 95 percent."

Imagine running a lamp for four hours by plugging it into a glass bottle or running a television for five days by hooking it up to a 30-pack of aluminum cans. A can thrown away wastes as much energy as pouring out a can half-filled with gasoline.

Using recycled aluminum cans and glass containers saves more than our roadsides and parks. Aluminum is a high-energy product, meaning the production of a can requires a large amount of energy and natural resources. For example, 95 percent less energy is

Iowa provides a consistent supply of used aluminum and PET (the resin used to make plastic softdrink bottles). PET is recycled to make new soft drink bottles and other containers, fiberfill for sleeping bags and jackets, carpet, tennis balls, clothing, automobile parts and several other products.

needed to produce an aluminum can from recycled material than it would take to produce the same can from raw material. Air pollution is also reduced by 95 percent when recycled aluminum is used.

Glass recycling saves energy and natural resources. Water use decreases by 50 percent and mining waste decreases by 79 percent when manufacturers include recycled glass in the process. Air pollution from glass manufacturing decreases by 14 percent when recycled glass is included in the process.

Iowa provides a solid supply of recyclables for re-manufacturing. Materials collected in the bottle bill process are of superior quality to materials collected through curbside recycling. Potential buyers of used containers know and appreciate the quality as deposit states typically get a higher market price for the redeemable materials. Containers are not mixed with other materials that would subject them to contamination as often happens through drop off, curbside and other collection systems. Iowa provides a consistent supply of used aluminum and PET (the resin used to make plastic softdrink bottles). PET is recycled to make new soft drink bottles and other containers, fiberfill for sleeping bags and jackets, carpet, tennis balls, clothing, automobile parts and several other products.

For the employees at Iowa City Goodwill Industries, the bottle bill means more than energy savings and less litter, it means independence. This sheltered workshop provides employees with a chance to learn basic business and interpersonal skills – all while earning a living. In 1997, the redemption center processed more than 83 million containers, and earned $1.3 million dollars in redemption revenue. Their redemption work means more than just employment. "We depend on the bottle bill and the revenue it brings in," says LeAnn Summers of Iowa City Goodwill Industries. "We use the money for several of our other programs — from our computer training center to our local counselors."

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The bottle bill provides jobs to many Iowans — an unplanned benefit of the law. During a speech at the 20th Anniversary celebration of the deposit law, John Watson, president of Goodwill Industries in southeast Iowa said, "[The bottle bill] means jobs for men and women with disabilities. The bottle law has provided work leading to long-term careers for some individuals. Other workers use the experience as a stepping stone to jobs in the community."

The bottle bill diverts 1.4 million aluminum cans from Iowa's landfills and landscapes annually. For every job created in Iowa's recycling industry, one additional job is created in the remainder of the state's economy. Fewer natural resources are used and less valuable material is lost to landfills because of the bottle bill. Consumers save money when the bottle bill and recycling work together to remove materials from the waste stream. Farmers save time and money in repairs to litter-damaged machinery and crops.

Alternative methods for preventing litter and increasing recycling should be researched, but not at the expense of a program that works. These results aren't taken for granted — evident by the estimated 8,000 signatures collected by the Izaak Walton League in support of the redemption law. "When traveling, people notice the difference the nickel redemption makes. Bottle bill states are noticeably cleaner," says Tom Rodd, president of the Iowa division. "The bottle bill is definitely a litter-control device."

As groups form to repeal the Beverage Containers Control Law, it becomes essential to Iowa's lifestyle that the bottle bill is protected. Let your legislators know you support this important legislation. Returning cans and bottles for a nickel keeps Iowa clean.

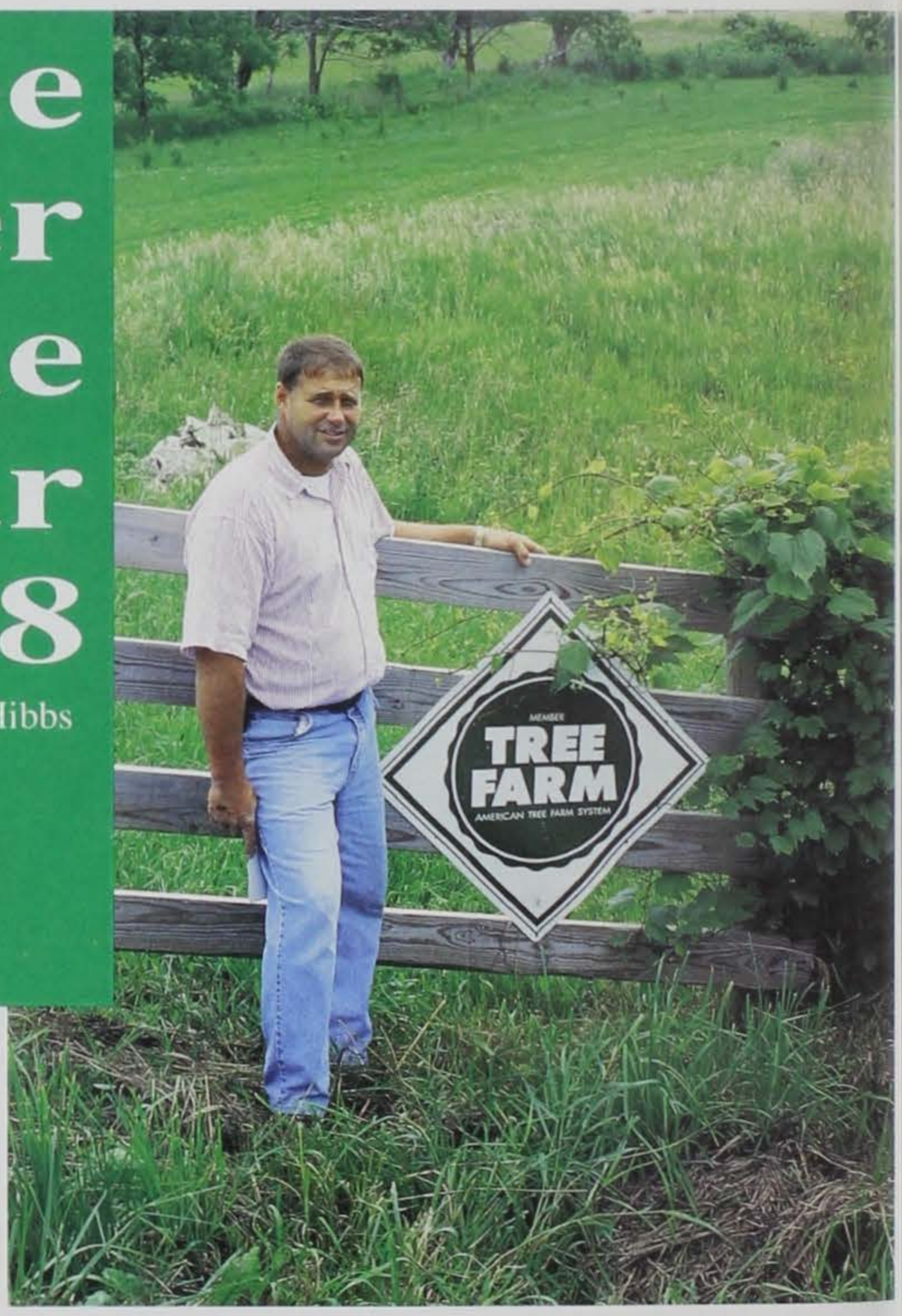
Amy Myers is a waste management information specialist for the department in Des Moines.

"When traveling, people notice the difference the nickel redemption makes. Bottle bill states are noticeably cleaner. The bottle bill is definitely a litter-control device."

Tom Rodd
president of the Iowa Division of the Izaak Walton League

Tree Farmer of the Year 1998

Article and photos by Bob Hibbs



(Opposite) Rod and Karen Swinton are working to restore their tree farm which was almost eliminated due to high-grade logging by a previous owner.

Since 1955, the Iowa Committee of National Tree Farm System has annually selected a "Tree Farmer of the Year." This year's selection, Rod Swinton of Waterloo, is an adjunct agriculture instructor and farm manager at Hawkeye Community College. Initially, Rod's primary interest in purchasing the property was to pursue deer and turkey hunting, however, active management of his property has led to a total, multiple-use philosophy.

"But it doesn't even look like a tree farm," was Swinton's response when he was told that he'd been selected as Iowa's Tree Farmer of the Year. It doesn't, if you think a tree farm should have rows of tall pine trees, thinned and pruned, with a weed-free understory, or only old-growth, mature trees.

The southwest of the Swinton tree farm is located in Buchanan County where Blackhawk, Benton and Buchanan counties meet. The ownership consists of 100 acres on the north bank of the Cedar River of which 14 acres are surface water, including an old channel pond. Six acres are open ground and 80 acres are woodland cover in varying growth stages. The woodland is roughly one-half bottom-

land timber (silver maple, ash and birch) and one-half upland (mixed oak and sugar maple). The Cedar River Nature Trail, popular among bikers and cross-country skiers, bisects the property.

Swinton and his wife, Karen, purchased the property in 1993. Shortly thereafter, he contacted the Department of Natural Resources Forestry Bureau and a management plan was prepared. The property was similar to many bought and sold today. Livestock grazing had nearly eliminated oak, walnut and maple seedlings, allowing the unpalatable thorny honeylocust and hawthorn to take over. Interior fences separated small pasture tracts, and in an effort to maximize his current cash return, the prior owner sold every tree with market value. This type of timber harvest, frequently referred to as high-grade logging, should have been avoided.

Livestock were totally eliminated in 1993, and a decision was made to begin work on the most abused portion of the property. A heavy infestation of honeylocust, hawthorn and multiflora rose on a 10-acre pasture was so thick a bulldozer was needed to clear the land. Thorny trees and brush were piled in a windrow fashion, leaving more than 75 percent of the tract in condition for machine tree planting. The few existing desirable trees were retained. Clearing was completed in 1994, and planting followed in 1995. At the same time, work began on a second upland tract of 27 acres. Because this area had less grazing damage and more residual trees, the weed-tree control work, such as spraying of multiflora rose and tree planting was done by hand. In early 1997, general timber stand improvement was completed on Swinton's bottomland forest area. All of the wooded portion of the property is being managed, but Swinton knows wild turkey like hawthorn apples, so he chose to avoid intensive work on a 12-acre tract along Mud Creek, flowing along the east side of the tree farm. The large, seed-producing honeylocust in this area will be destroyed, but efforts will be less intensive until results on other areas are more evident. The Swintons' long-term goal is to improve the property for the eventual benefit of their daughter, Sheena, and their son, Daniel.

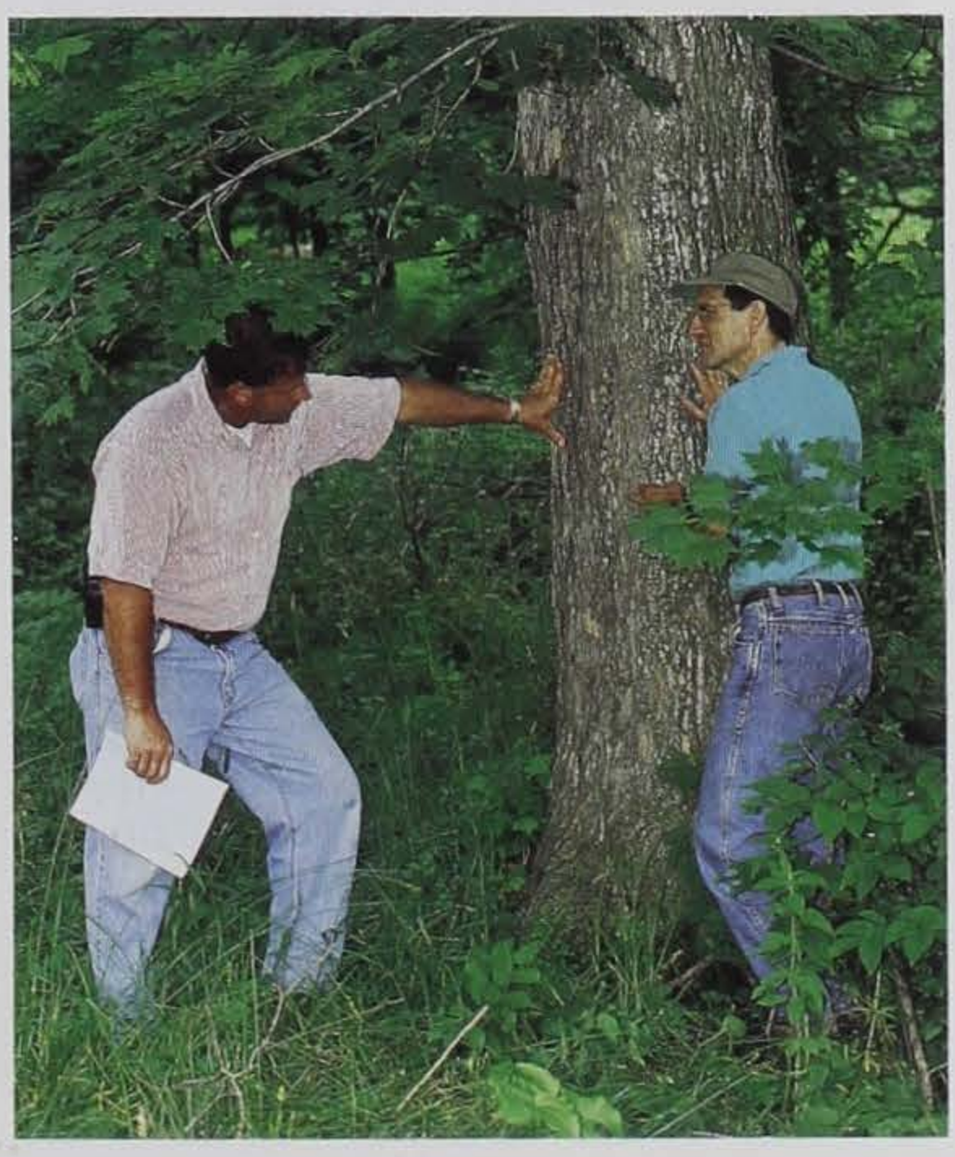
Swinton tells of his friend's woodland in Clayton County, which is apparently more uniform in age and appearance. "You know, we really prefer to hunt my land, because we can hunt five different units," Swinton says. Foresters refer to these "units" as different forest stands. Most wildlife species prefer not only diversity of species, but diversity of age structure showing forest management can address many wildlife needs.

Swinton completed the Buchanan County Master Woodland Managers' course in 1995. This 32-hour program presented by the Department of Natural Resources and Iowa State University foresters, is extremely popular among woodland owners. Each graduate of the course is asked to donate 32 hours of public service towards good forest management. Swinton has taken this effort further, hosting the Hawkeye Community College environmental conservation class for an annual work-study experience. Swinton has spoken of "being the voice for forest management and tree harvesting" among students and other instructors who are of the preservationist philosophy.

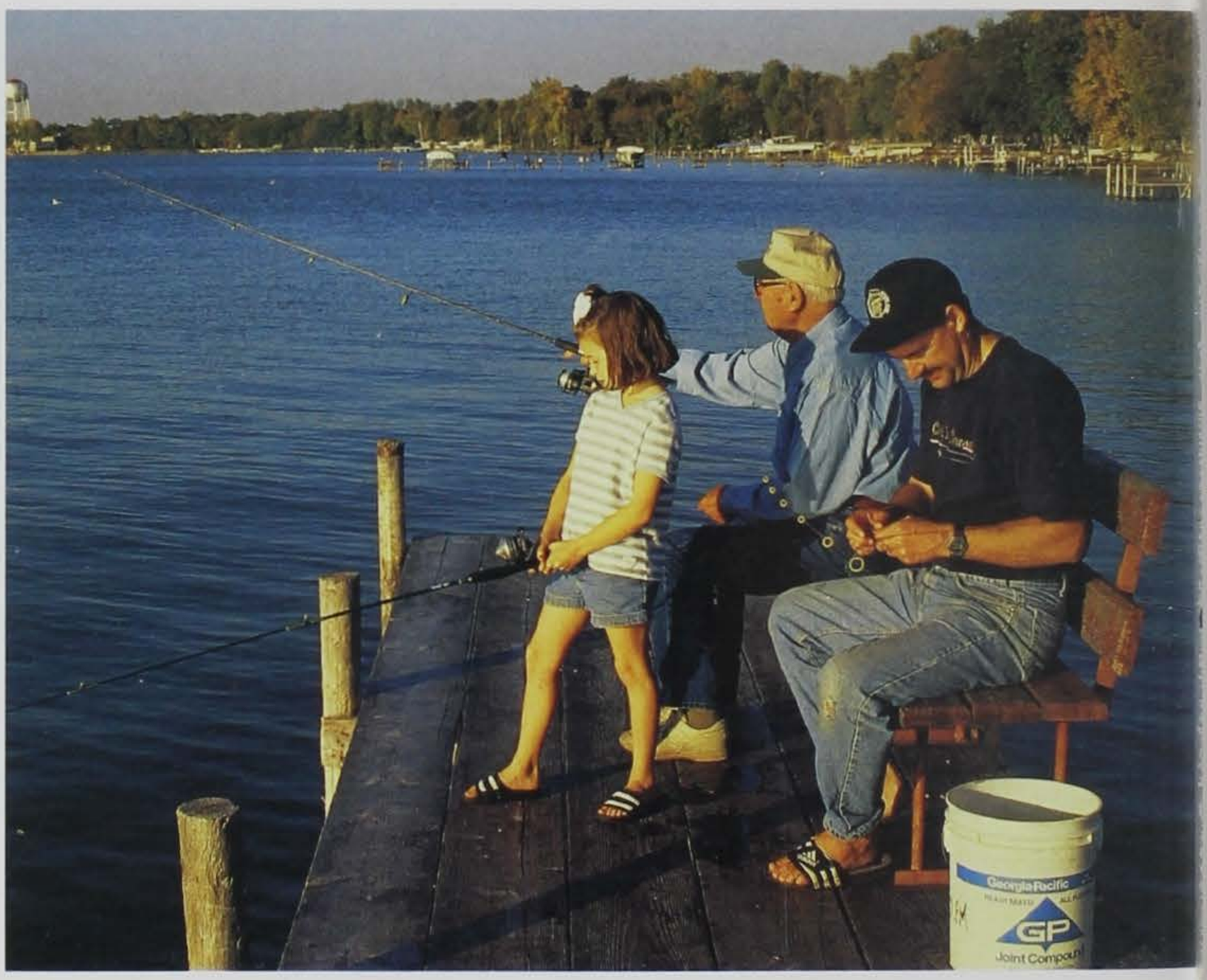
Many improvements to the property are readily visible. Wildlife nesting structures have been installed and interior fencing has been removed. A four-acre open field has been successfully seeded with native grasses and wild plum seedlings have been planted at the entrance to the property. This winter, some of the low-quality sugar maple trees will be tapped for syrup. These are visible improvements, but as Swinton noted, "If you're a corn farmer coming into this tree situation, it's entirely different."

Forest progression is slow, but after the Swintons' work, ten years will show remarkable improvement. The Swintons' forest may not fit the stereotype of what a tree farm looks like, but his earnest efforts to improve the resource, coupled with his active support of forest management, have earned him the honor of Tree Farmer of the Year for 1998. We applaud his diligence!

Bob Hibbs is a district forester for the department in Marshalltown.



1993 Tree Farmer of the Year, Greg Twedt, and Swinton discuss the possibilities of tapping sugar maple trees this winter for making syrup.



SPIRIT LAKE'S DOC

Article by Jim Wahl
Photos by Lowell Washburn

My story is not unique. It's about a father and son who share something special — the sport of fishing.

Most of us have a mentor — someone who introduced us to fishing. It doesn't have to be a father. It could be a mother, uncle, brother or sister. For me it was my dad — Doc.

I grew up in a small town in northwest Iowa. The only nearby waters were Otter Creek and the local sandpit. You could catch chubs in the creek or an occasional bass in the pit, but if you really wanted to fish you'd travel to the Iowa Great Lakes — a 45 minute drive, or if dad was in a hurry — 30 minutes!

Doc was a large-animal veterinarian and he spent most of his time pulling calves and vaccinating pigs. If he wasn't out at a nearby farm, he was in the area on call. On Saturdays, he worked the sale barn. Rarely did he have any time off, but when he did, he was usually fishing.

That's where it all started for me. I'm not exactly sure at what age, but I know I was young — grade school. We'd hook up to Dad's 1960-vintage Alumacraft boat and trailer and head for Spirit Lake. Often my brother would come along, and occasionally my older sisters. This wasn't just a brief afternoon trip on the water. This was an all-dayer. Doc got away so little, he wanted to make the most of it when he did.

Once on the water, I'd last for a while, usually longer than my brother. But let's face it, patience isn't a strong suit for most grade-schoolers. If there was a lull in the action, Doc would take us to shore and we'd spend the rest of the day exploring the wooded shoreline of Marble Beach on Spirit Lake.

By today's standards Doc violated the cardinal rule when taking a youngster fishing — don't stay too long, and fish for something easy to catch. We always stayed long, and we usually

fished for walleyes — and they weren't exactly jumping in the boat. When quitting time approached, I remember praying that Doc wouldn't get another bite, because if he did, it meant another 30 minutes. If he caught another fish — at least another hour! He never told mom when we'd be home — now I understand why!

Despite these all-dayers and some serious boredom in the boat, my passion for fishing grew stronger. Years went by and things didn't change much, the fishing trips to Spirit Lake continued but were all too infrequent.

Then one day, things changed dramatically. Doc announced that he and his vet partner had bought a cottage on Spirit Lake. Maybe all those long hours and late night calls had paid off for the Doc after all. Eureka! Now I could fish all the time and if I got bored there would be TV and pop waiting at the cottage. But it wasn't all that easy. Another tough decision had to be made. Do I give up summer league baseball for fishing all summer on Spirit Lake? I couldn't do both. Granted, I was no Kirby Puckett, but I was a pretty darn good baseball player. I chose fishing.

I spent my youth fishing on Spirit Lake, sometimes by myself, other times with friends, but mostly with Doc. Doc would guide and I would ride. The challenge of catching fish was always our goal, but there was more to a trip than catching fish. When you're in a boat on a 6,000-acre lake, there's plenty of time for conversation. We'd talk about fishing, or school or the football team. It didn't matter what the subject was, we were talking and enjoying each other's company.

I didn't realize it then, but during those years Doc was also steering me towards my lifelong profession. I had an aptitude for science and a love of the outdoors, so Doc suggested I go to college and study fisheries biology. After I graduated, I worked in South Dakota, New York and Utah. All the while, Doc followed my developing career with the keenest interest.

Several years into my career I got an opportunity to come back to Iowa. By this time, Doc had retired and took up permanent residence on the north shore of Spirit Lake. Now the tables were turned, I had to work for a living, and Doc had all the time in the world to fish. Despite work, there was always time to fish, and now I lived only two hours away in Clear Lake. The same spots that produced limits in the 60s were still good in the 80s. The only difference was now I wanted to fish all day and Doc wanted to go to shore. I guess when you can fish every day there's no longer the urgency to be on the water every waking minute.

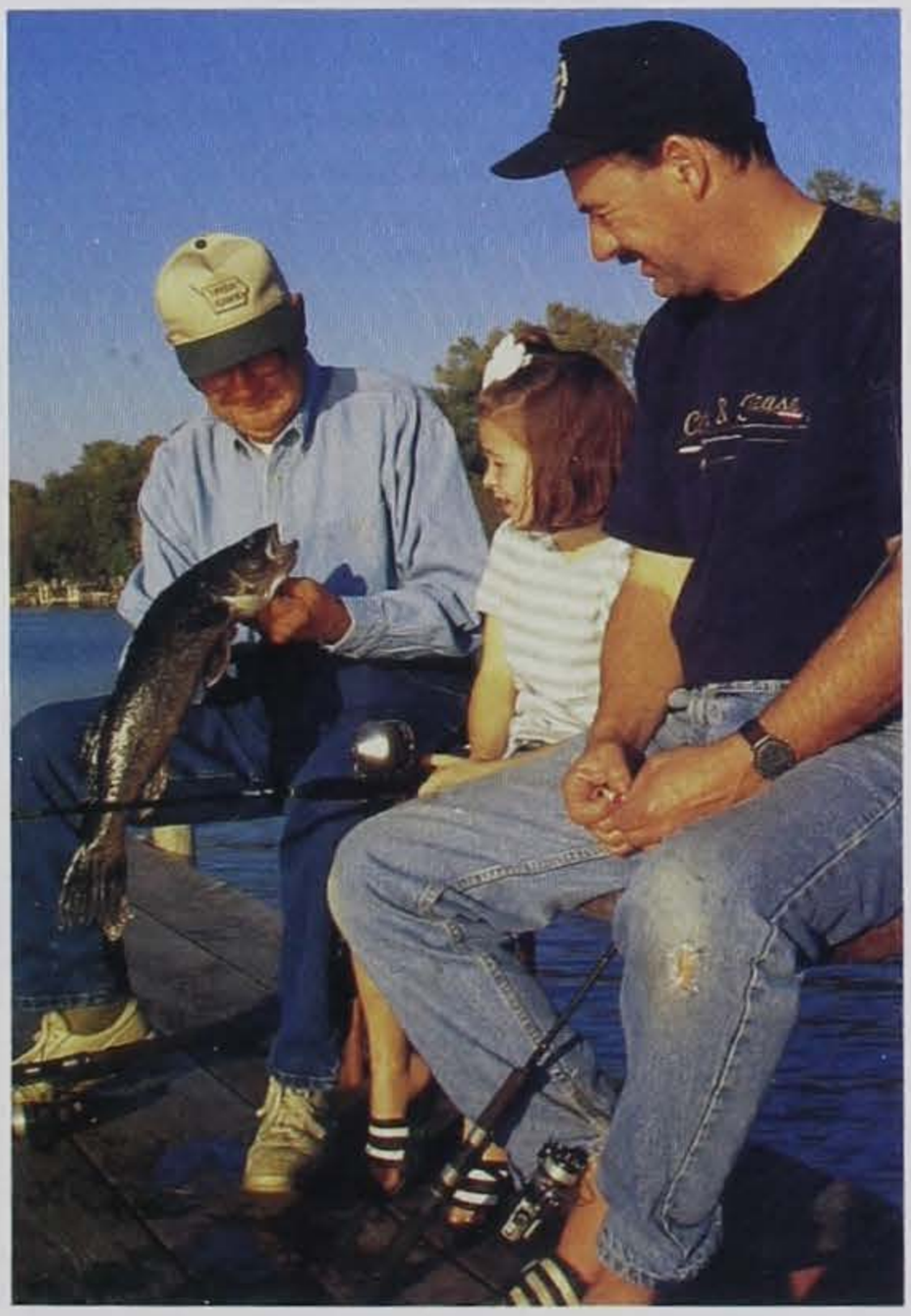
There were other differences, too. Instead of being satisfied to sit in the front of the boat, now I wanted to guide. And how about catch-and-release? I have a difficult time observing someone harvest an 18-inch smallmouth bass, even though the legal length is 15 inches. Have you ever tried to convince someone who grew up during the Depression to release a perfectly good eating fish? Well it's not easy and it took a while with Doc, but now he proudly releases legal-size bass. However, he does draw the line when it comes to walleye — if it's legal, it's going in the basket! That's understandable. I like to eat fish as much as anyone.

One thing I always admire about Doc is his willingness to share his knowledge and good fortune with others. Maybe he likes to brag too much (all anglers are guilty of it sometimes), but usually he just wants others to enjoy and catch fish, too. So you won't see Doc secretly guarding a honey hole. In fact, quite the contrary, he'll direct you to a spot using landmarks with the same precision the finest GPS units can.

So where does this all lead. Well, Doc and I still fish together. Sometimes on Clear Lake, but mostly on Spirit Lake. Through all these years the goal hasn't changed. We're still trying to catch fish. But that's not everything. Sometimes the fishing is great, but the catching is poor. The important part is a common interest that allows a parent and child to share time together.

Now I have two children of my own. Maybe someday my son or daughter will have to choose between baseball or softball and fishing. I hope not, but I do know in my case, I made the right decision.

Jim Wahl is a fisheries biologist for the department at Clear Lake.



Doc, Jim and his daughter enjoy many days on the lake together.

The Beginning Of An Era

by Alan Foster

A new year. A new era. A new license. A new way to do business.

Many of Iowa's hunters, anglers and trappers may have already noticed the difference. For those who haven't, it won't be long. The Iowa Department of Natural Resources is ushering in the new millennium in grand fashion. After decades of issuing licenses the old fashioned way, the DNR is looking to the future, a future that is becoming progressively electronic.

For years, the DNR has issued a separate license for each hunting, fishing or trapping privilege available, excluding combination hunting and fishing, and fur, fish and game licenses. Times are changing. Beginning this year, a single license will be issued for all license options and fees available, essentially allowing the buyer to "custom build" their own license.

Single License Form

The single license form went into effect Dec. 15, 1998, with the beginning of 1999-2000 licenses sales. No longer will the outdoorsperson be required to buy separate licenses to hunt, fish or trap. The new license allows the outdoorsperson to conveniently include all options desired on one form.

Changes for 1999

The changes are many. In addition to the single license form, the state did away with the habitat, trout and state waterfowl stamps as physical entities. Instead, they were changed to fees, included on the new license form. Although an actual stamp will no longer be required for licenses, they will continue to be issued for the purpose of collecting and will have no legal capacity. Those wanting a stamp may pay the appropriate fee at any license vendor and submit a postcard to the DNR for the stamp. Postcards may be obtained wherever licenses are sold.

Due to the nature of the new license, which allows all options to be included on one form, the DNR eliminated the combined hunting and fishing, and fur, fish and game licenses.

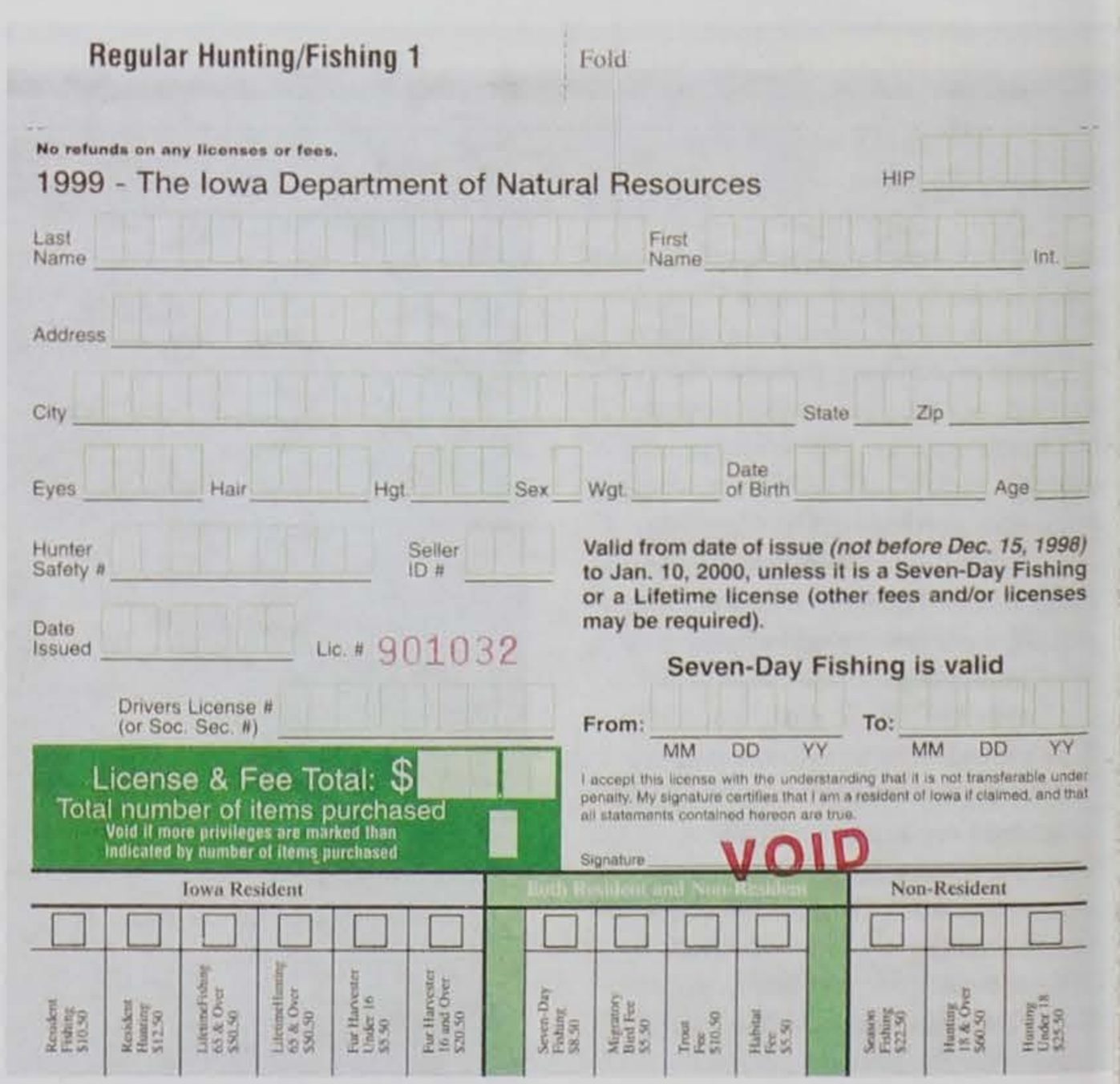
Licenses added for 1999 include lifetime hunting and lifetime fishing for Iowa residents age 65 an older and nonresident hunting for those under 18. The cost for each of the lifetime licenses is $50.50. The nonresident hunting license for those under 18 is $25.50, a $35 savings from the normal nonresident hunting license.

Some license fees have also been adjusted slightly to reflect the change in licensing procedures. State habitat, waterfowl and trout fees (formerly stamps) increased 50 cents, as did the resident deer and turkey licenses. Habitat and Iowa waterfowl fees are now $5.50; trout fees, $10.50; resident deer licenses, $25.50; and resident turkey licenses, $22.50.

Nonresident license fees also increased. Deer licenses increased from $110 to $150.50, nonresident turkey licenses from $55 to $75.50 and nonresident furharvesters licenses from $175.50 to $180.50.

How It Works

Even with the changes, buying a 1999 license will remain rather simple. The buyer need only provide the standard information such as name, address, date of birth, height, weight, etc., then choose the options desired. The corresponding boxes are checked, the appropriate fee paid and the procedure is complete.


Regular Hunting/Fishing 1

Fold

No refunds on any licenses or fees.

1999 - The Iowa Department of Natural Resources

HIP

Last Name

First Name

Int.

Address

City

State

Zip

Eyes

Hair

Hgt.

Sex

Wgt.

Date of Birth

Age

Hunter Safety #

Seller ID #

Valid from date of issue *(not before Dec. 15, 1998)* to Jan. 10, 2000, unless it is a Seven-Day Fishing or a Lifetime license (other fees and/or licenses may be required).

Date Issued

Lic. # 901032

Seven-Day Fishing is valid

From: MM DD YY

To: MM DD YY

Drivers License # (or Soc. Sec. #)

License & Fee Total: $

Total number of items purchased

Void if more privileges are marked than indicated by number of items purchased

I accept this license with the understanding that it is not transferable under penalty. My signature certifies that I am a resident of Iowa if claimed, and that all statements contained hereon are true.

Signature

VOID

Iowa Resident

Resident Fishing $10.50

Resident Hunting $12.50

Lifetime Fishing 65 & Over $50.50

Lifetime Hunting 65 & Over $50.50

Fur Harvester Under 16 $5.50

Fur Harvester 16 and Over $20.50

Both Resident and Non-Resident

Seven-Day Fishing $8.50

Migratory Bird Fee $5.50

Trout Fee $10.50

Habitat Fee $5.50

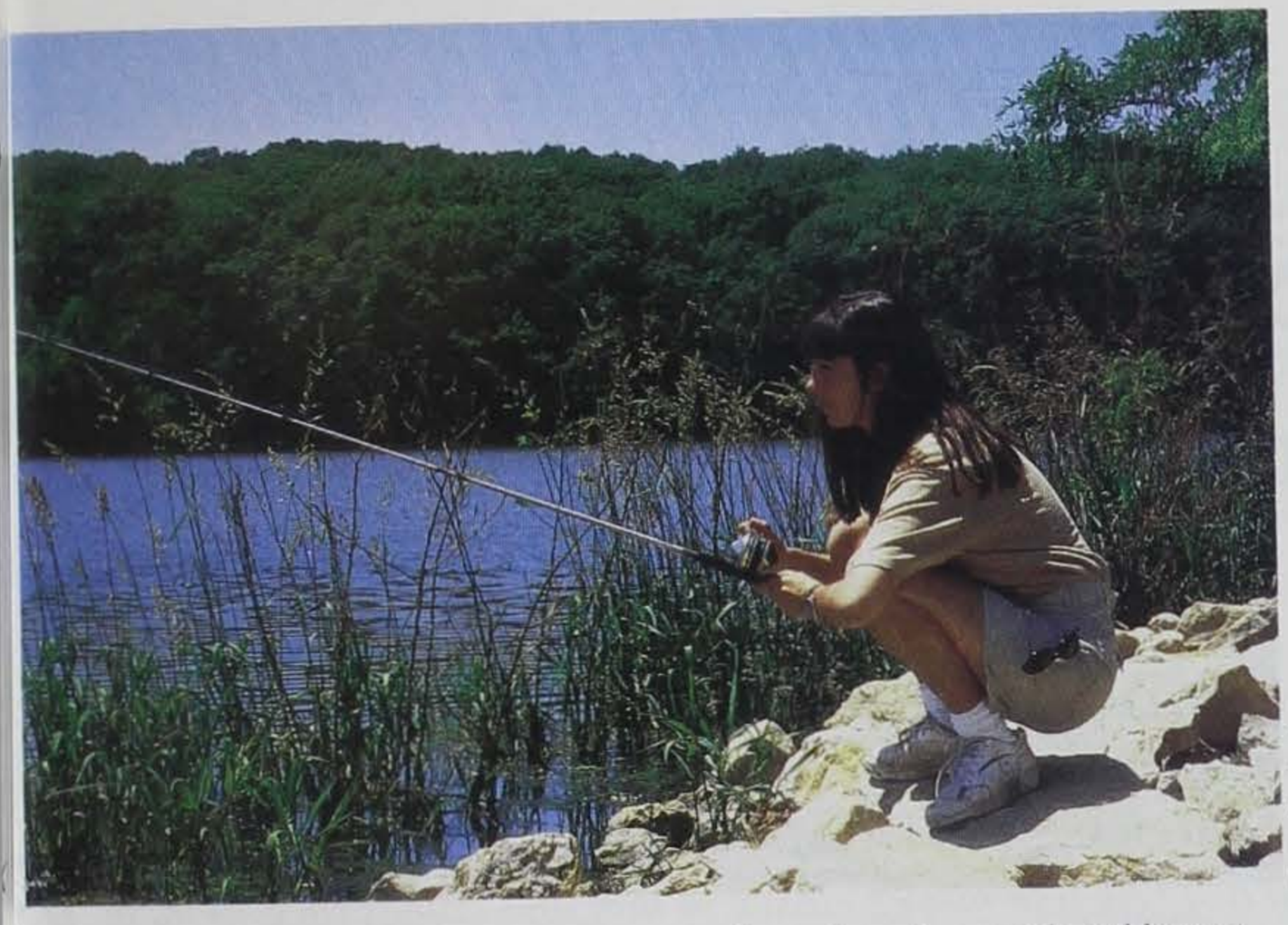
Non-Resident

Season Fishing $22.50

Hunting 18 & Over $60.50

Hunting Under 18 $25.50

Beginning this year, one form will be used for all hunting, fishing and trapping license and fee options available, excluding deer and wild turkey. The new license will aid in the eventual change to electronic licensing.



Casey Gradischnig

Why A New License?

The changes enacted were made to ease the transition to electronic licensing. In 1999, licenses will still be handwritten. However, in the near future most, if not all, licenses will be issued via computer.

Electronic licensing, or Automated Sportsperson's Data System (ASDS) as it is being called in Iowa, is still in the planning stages. DNR officials hope to have pilot projects in place at various locations in the state by late 1999 or early 2000. Once in place, licenses will be issued through a small table top computer, similar to a credit card machine.

Currently, Texas, Oregon, Idaho, Michigan, North Carolina, Maryland, Missouri and Kentucky have electronic licensing, and Wisconsin and Minnesota have pilot projects in the works.

Benefits

Electronic licensing is expected to make the licensing process quicker and easier for the vendor and customer, as well as creating a database of Iowa hunters, anglers and trappers. The database will provide DNR officials with valuable statistics regarding hunter and angler participation, trends and harvest estimates. Once the databases are created, vendors will be able to access past licensing information instantly, thereby expediting the licensing process.

Public Acceptance

There are many unknowns at this stage in ASDS development. One unknown is how the public will view the new system. Change is often difficult to accept, and only time will tell how electronic licensing is perceived.

Missouri, which is nearing the end of its third year under electronic licensing, has had its share of problems. One mistake, according to Wildlife Resource Supervisor Larry Vangilder, was in not employing a system that fully met the needs of the department, the permit vendors and the public. The result was a need for substantial changes in the system as problems surfaced. Lack of consistency due to the changes impacted public perception and acceptance of the system, Vangilder said.

Overall, however, the change has been generally well accepted in Missouri. Al Brand, fiscal services supervisor for the Missouri Department of Conservation, said permit vendors love the new licensing system because of its ease and quickness. The public likes it for the same reason. A general license can be issued in about 30 seconds, Brand said, and replacement licenses are much easier to obtain. Wildlife and fishery biologists love it because of the instant availability of harvest data. And Missouri officials say changes have been made for next year which should help the process run even smoother.

Ken Formanek

Changes in licensing procedures will affect anglers (above), hunters (right) and trappers.

WHO'S OUT THERE?

Uninvited Underwater Guests

by Karen K. Aulwes

In a crevice beneath the rippling water he waits, lurking, with senses heightened. Then he spots something; some movement above. A small school of fish skitters closer and closer. He moves fluidly from side to side his fierce jaws agape. Then a single fish moves closer to him and comes face to face. He lunges. The jaws close around it in a swirl of confusion as others dart away to safety. Only a wisp of a fin is visible as the jaws once again clench mechanically. It is gone; vanished inside the now motionless jaws. He backs effortlessly into the crevice once again to lie in wait for his next victim . . .

It is not Jaws or the Creature from the Black Lagoon, nor is it an aquatic mutant monster. It is a common fish. What is not common, however, is that it is an exotic fish. Exotic, by definition, is something not native to the place it lives, or is introduced from another country.

Black pacu caught by a commercial fisher in De Soto Bay near De Soto, Wisconsin. The black pacu is a vegetarian piranha, feeding upon aquatic plants. Its foraging behavior upsets the balance of the aquatic plant community influencing both plant and animal species.

Valerie Hyde

Species such as the red-tailed catfish and the black pacu are common aquarium pets brought to this country by the international pet trade. Unfortunately, many aquarium enthusiasts decide to release their pets into the wild — perhaps, due to boredom with their hobby or because they believe the fish will be "happier" in the wild. However, their good intentions could not only have ill effects on their beloved pet, but potentially devastating consequences on the ecosystem.

Native species found in an aquatic ecosystem have evolved together through time. A small aquatic insect, for example, hatches and is eaten by an orange-spotted sunfish. The sunfish may in turn be eaten by a predator fish such a largemouth bass and the largemouth bass may be eaten by a northern pike. This predator-prey relationship keeps the populations in check. An exotic species begins to squeeze out native fish and fills their niche when introduced. It may affect one or more steps in the food chain skewing the system. Fish such as walleye, bass, bluegill or catfish must now compete with the new fish on the block resulting in poor survival of these native fish. Exotics not only eat the food source of native fish such as bottom-dwelling organisms and other fish species, but may also eat fish eggs and larvae. Exotic fish may have an advantage over all other species in the ecosystem due to a lack of disease pathogens, parasites and predators to keep their populations in check. Exotic species may also disturb the aquatic vegetation, harming spawning areas or cause young-of-the-year fish to perish because they lack a place to hide from predators. Exotics are adaptive enough to reproduce if given the right conditions and the opportunity. Many people believe that "just one" will not do any harm, yet free of natural enemies to suppress the population, it would not take long for a few to multiply and flourish.

A commercial fisher caught this 12-pound red-tailed catfish near Lansing, Iowa, on Pool 9 of the Mississippi River. Anglers caught two others on the Cedar River near Vinton. Native to the Amazon basin of South America, it is likely an introduction from a household aquarium. The species may grow up to 80 pounds and in the process, consume the food source and the young of native fish species.

The red-tailed catfish captured on the Mississippi and Cedar rivers are more than likely aquarium outcasts. The red-tailed catfish scavenges food from the bottom and preys upon most any type of live fish. They were probably able to survive the harsh Iowa winters near the warm water effluent of nearby power plants. The black pacu feeds on vegetation. It may disrupt the plant community by rooting up and feeding upon native vegetation beds. Historically, introduced species have had long-term negative effects on diversity and productivity of aquatic communities.

An example of an aquarium introduction causing extensive damage is the decorative plant, Hydrilla *(Hydrilla verticillata)*. It has become a serious invader in Texas, Florida, California and many other states. Disposal of aquarium water and drainage of ornamental plant stock from private water gardens in the 1950s caused a rapid expansion of the serious invader. Shipments of ornamental water lilies spread shoots of Hydrilla around the country. Having no natural control mechanisms, the plant can completely choke off ponds and lakes and clog water intakes in municipal water treatment systems.

Several introduced species are making an impact on native resources in Iowa today. Eurasian watermilfoil is present in great quantities in the Mississippi River as well as several inland lakes. Purple loosestrife is an invader causing imbalance in marsh areas. The prolific zebra mussel, a bivalve mollusk or clam has established itself in the Mississippi River.

Eurasian watermilfoil

Lowell Washburn

Purple loosestrife

EURASIAN WATERMILFOIL

Eurasian watermilfoil is a rooted aquatic plant accidentally introduced to North America from Europe in the 1940s. It exists in 37 states and three Canadian provinces. The plant can reproduce from tiny fragments, forming thick impenetrable underwater mats in lakes. These thick mats interfere with recreational boating, swimming and fishing activities. Dense stands of Eurasian watermilfoil crowd out other plant species, support massive algae blooms, clog water-supply intakes and destroy fish spawning areas. Its dense foliage may hinder the work of predators, resulting in stunted populations of panfish. Its floating canopy deprives other aquatic plants of sunlight. Displacement of waterfowl and fish species occur due to lack of other aquatic plants.

Human activity and water birds can spread Eurasian watermilfoil. The plant's ability to reproduce from tiny fragments and runners make it a successful invader. Boat trailers and propellers can transport fragments of entangled plants. Dispersal by bait buckets, boat anchors and recreational watercraft is also a problem. There is no effective control for Eurasian watermilfoil other than preventing its spread to new waters. Chemical control is a very costly alternative. In Vermont, a small scale experiment using a weevil species that preys upon Eurasian water milfoil is being tried on selected ponds.

PURPLE LOOSESTRIFE

Purple loosestrife is an exotic wetland perennial introduced into the eastern United States from Europe and Asia in the 1800s. It spread aggressively westward along waterways and wetlands and out-competed many native wetland plants such as cattails. This highly adaptive invader eventually dominates a marshy area causing a loss of food, cover and nesting sites for native wetland dwellers such as ducks, geese, rails and turtles. Endangered species are at an increased risk due to loss of native vegetation. Like Eurasian watermilfoil, purple loosestrife is capable of sprouting from fragments of the plant. A single plant can also produce more than two million seeds annually. Development of wetland areas and disturbance of these moist soils increases the chances of invasion of purple loosestrife. The lack of natural predators allows it to spread unchecked.

The Department of Agriculture is currently experimenting with beetles that attack purple loosestrife as a biological control. Careful research was conducted on the beetles to ensure they will prey only upon purple loosestrife, so the beetles themselves do not become a pest as well. Two species of predacious beetles are being tested in targeted areas infested with purple loosestrife. The beetles are causing reduced stands of loosestrife through defoliation of the plant.

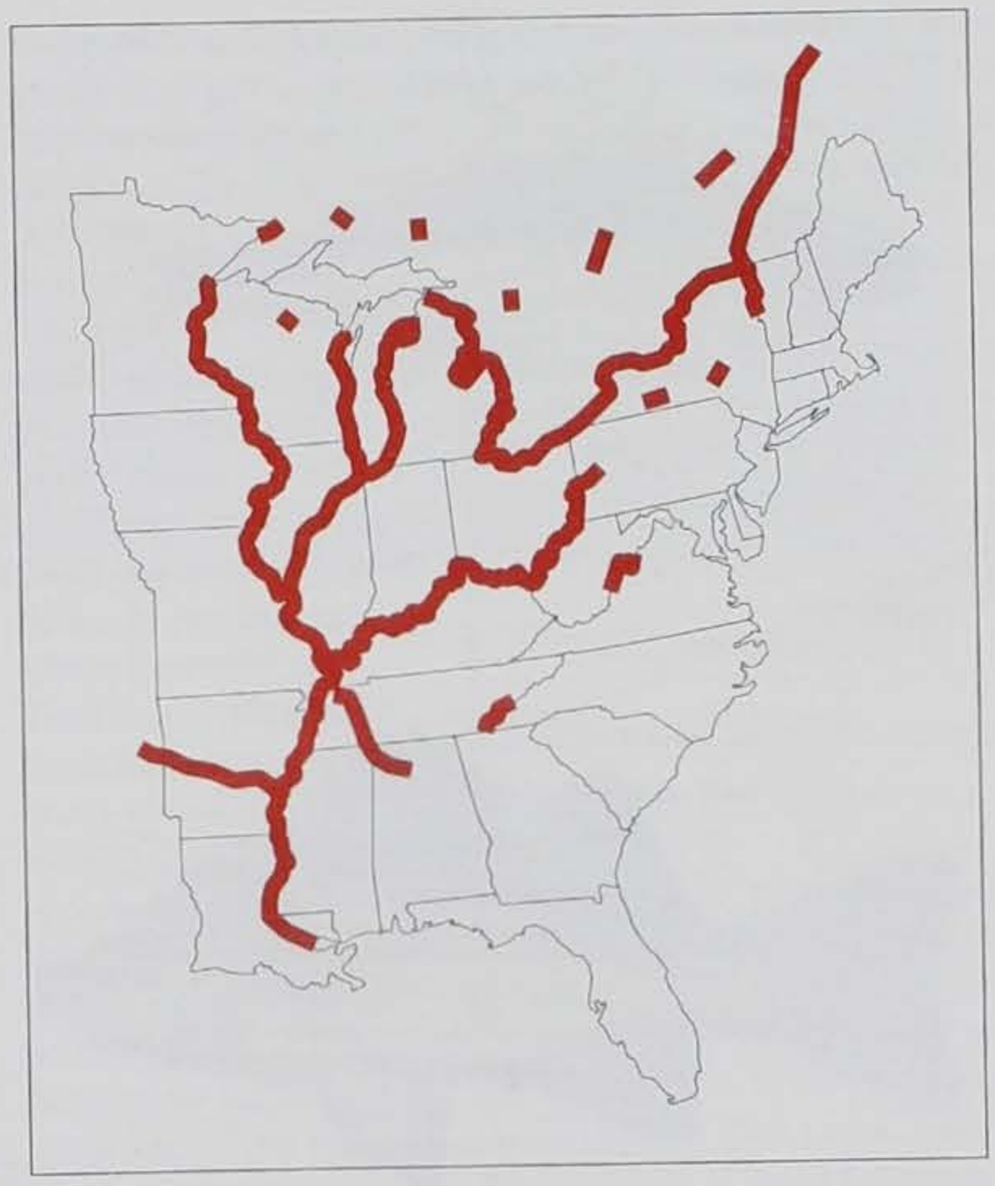
ZEBRA MUSSELS

The zebra mussel is a small mollusk about the size of a fingernail. Native to the Caspian Sea region in Asia, they were introduced to North America by ocean-going ships that take on ballast water in Europe for stability while crossing the open ocean. When the ships reach their ports in the Great Lakes the water is pumped out before loading the cargo. Adult zebra mussels attach to boat hulls, rocks, intake pipes of water supplies, locks and dams, boat docks, native mussel shells and plants

by "byssal threads." The microscopic larvae of the zebra mussel called "veligers" are dispersed by currents or transported in live wells and bilge water of both commercial and recreational boats. Two-year-old zebra mussels were first discovered in Lake St. Claire near Detroit in 1988. In just one year, breeding zebra mussels were dispersed throughout the western basin of Lake Erie. Zebra mussels rapidly spread to all of the Great Lakes, the Detroit, Ohio, Illinois, and Mississippi rivers by 1992. By 1995 the entire Upper Mississippi River was inundated.

A single zebra mussel can produce up to one million eggs per year. Free swimming veligers hatch and disperse in the water. In just three weeks they begin shell formation and attach to the hard surface of native clams or any other hard surface exposed to the water. They feed on plankton filtered from the water. Continually filtering, the zebra mussels remove most of the plankton used by other clams and larval fish. What is not used by the zebra mussel is combined with mucus and excreted as "pseudofeces" that settles to the bottom. Bottom feeding organisms may use this material, however, it is taken out of the food chain for many other upper water species, upsetting the balance of the ecosystem. Filtering causes the water to become clearer, which in turn allows sunlight to reach the lake or river bottom initiating increased plant growth which may have adverse effects on spawning habitat.

Because of zebra mussel infestations, aquatic insects may also lose their niche in rocky substrates, causing a shortage of food for fish. Freshwater clam beds suffocate under dense colonies of zebra mussels and may cause the extirpation of many native clams. Razor-sharp shells cause injuries when stepping on zebra mussel-infested shorelines and swimming beaches. A complaint among anglers on the Mississippi River is loss of tackle as a result of serrated fishing line. Delicate immature zebra mussels may be eaten by diving ducks and fish such as freshwater drum, carp, and sturgeon, but these predators do not have a significant impact on the larger reproducing adult mussels.



Zebra mussel infestation in North America.

An effective control for zebra mussels is unknown. Boating and fishing are the primary means of spreading zebra mussels from one body of water to another. Precautions taken by boaters and anglers are the key to preventing the spread of the zebra mussels into inland lakes and streams. Zebra mussels should never be transported inland to help "clear up" the water in private ponds or lakes. They can do more harm than good in a water ecosystem. The zebra mussels also use the dissolved oxygen essential for fish survival.

Many other species of fish have migrated into Iowa waters either intentionally or by accident. The Asian bighead carp, a filter feeder, strains phytoplankton from the water column competing with larval fish and paddlefish. It is becoming abundant in the Des Moines and Chariton rivers. The silver carp also filters out phytoplankton critical in the development of larval fish. Grass carp, originally stocked in private farm and golf course ponds, have escaped into public waters and have a hearty appetite for vegetation.

DNR photo

Zebra mussels

Gary Cholwek

Ruffe

Ohio DNR

White perch

David Jude

Round goby

OTHER POSSIBLE INVADERS

Other exotic invaders could have the potential of moving into inland lakes and streams from the Great Lakes in the same manner as the zebra mussel. A series of artificial canals and channels were constructed for ship passage from the Great Lakes to the Mississippi River. These canals provide a passage for invading exotic species. Non-native species introduced from overseas into the Great Lakes system migrate into the canals leading to the Illinois Waterway System and the Mississippi River Basin. Aquatic nuisance species in the Great Lakes and Illinois waterway systems include the round goby, ruffe, and white perch. These exotics have had negative effects on the ecosystem and the economy of the Great Lakes.

Like the zebra mussel, the round goby is native to the Black and Caspian Sea region and was introduced in ballast waters of transatlantic ships. In it native habitat, it feeds upon zebra mussels among other things. It was first collected in North America in 1990 in the St. Clair River, Michigan. By 1993 it was found in the Calumet River and southern Lake Michigan. Some areas have concentrations of round goby as high as 20 fish per square meter — equivalent to 20 fish in a space the size of a bathtub.

The round goby is an aggressive fish often caught by hook-and-line. It is able to exist in poor-quality water and can spawn up to six times per season. It has an advanced sensory system that uses sensory pits on the head called neuroblasts allowing it to outcompete native fish by feeding both day and night. It eats the eggs of other fish in the Great Lakes, such as lake trout. It also feeds on bottom-dwelling organisms such as clams and midge larvae. Its bottom feeding behavior causes concern for the potential to accumulate contaminants and contribute to increased levels of toxins in sportfish and other predator species.

A national Aquatic Nuisance Species Task Force is taking action to coordinate all activities involving nonindigenous aquatic species. Actions being taken include the implementation of ballast water dumping regulations within North American waterways and construction of underwater electrical barriers in the Chicago sanitary ship canal. Great Lakes anglers are being urged to report any catches of round gobies and state regulations prohibit the transport of live round gobies.

The European ruffe is another pest recently found in Lake Superior near Duluth, Minnesota and in the Brule River in Wisconsin. This small cool-water fish resembling a perch rarely exceeds 10 inches in length. It feeds voraciously upon anglers' baited hooks and the eggs and fry of sportfish such as perch and whitefish. It is impacting the populations of yellow perch, emerald shiners and other forage fish. It has extremely rapid growth and is able to reproduce in the first year. Its sharp, spiny fins and gill covers make it difficult for other fish eat. Limited control through netting and trapping has slowed the spread of ruffe as chemical control may harm sportfish populations.

White perch are native to the Atlantic coastal region. It invaded the Great Lakes in the 1950s through the Welland and Erie canals. It is a competitor of the Great Lakes walleye population.

Rudd are native baitfish in Eurasia. None have been reported in Iowa, however, it was most recently found in Illinois. It is similar in appearance to the native golden shiner, except that it grows to 20 inches in length.

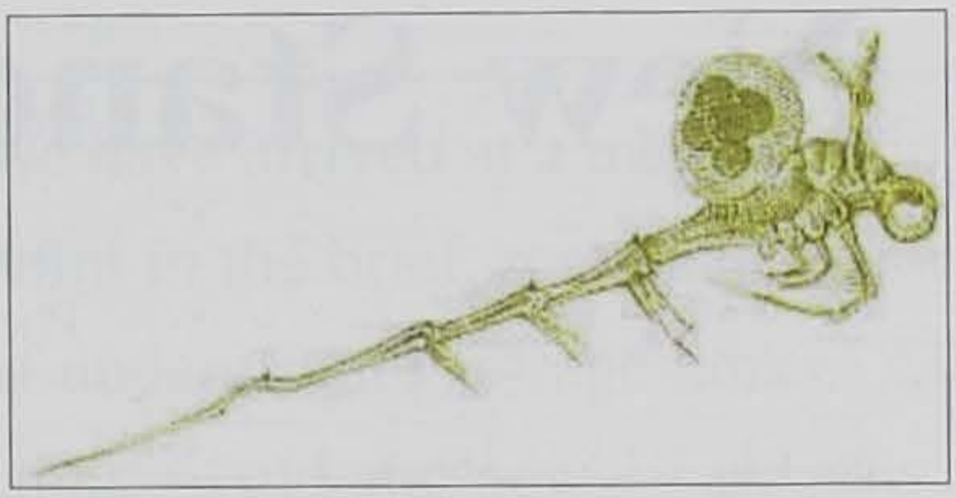
Fish and plants are not the only invaders wreaking havoc with the ecosystem. The spiny water flea, a predacious cladoceran no larger than a staple, is gobbling up other zooplankton such as Daphnia, a tasty favorite of larval fish. About 3/8-inch long, the water fleas have long spiny tails that make them difficult for young fish to swallow. They travel in large schools drifting in the Great Lakes' currents. Masses of the spiny pests interfere with fish locators, fishing lines and nets. Their impact is still unknown but is expected to depress numbers of zooplankton.

Rusty crayfish are large aggressive crayfish native to streams in Ohio, Kentucky and Tennessee. They have been spread to nearby states via anglers' bait buckets and biological supply warehouses. They forage upon vegetation, insects and snails and also disturb the nests of spawning fish, scavenging eggs. The rusty crayfish is larger than native crayfish and will drive them from protective cover and food.

Minnesota Sea Grant exotic species specialist, Doug Jensen, stresses the importance of anglers' ability to identify exotic species. "Anglers are often the first to discover an exotic species introduction. It is important that potential invaders are publicized so that anglers can recognize the problem at the onset and know the proper action to take."

If you believe you have caught an exotic species of fish, please do not release it back into the water or transport it to any other body of water. Contact your nearest Department of Natural Resources fisheries biologist or conservation officer, and report your catch immediately. Never transport any live bait or fish in a live-well or bait bucket from another state into Iowa waters. Avoid transporting fish between lakes or streams.

If you have a home aquarium with exotic fish, never release unwanted fish into any pond, lake or stream. Often, the pet store where the fish was originally purchased will allow pet owners to "trade in" a fish that has outgrown its aquarium. Keeping exotics in the aquarium where they belong will help preserve the natural balance of Iowa's aquatic ecosystems. By the same token, baitfish and crayfish should never be transported and dumped into lakes or streams. The extra effort taken to prevent the spread of exotic species will eliminate the need for costly control measures.



Spiny water flea

Revenues from hunting and fishing licenses and habitat fees go towards enhancing the quality of Iowa's fisheries and wildlife. Every dollar spent to eradicate an exotic invader is a dollar lost to improving fish and wildlife populations and habitat. Every angler and outdoor enthusiast needs to stay abreast of potential exotic invaders. Some introduced species may have little or no impact. The impact of others may be tremendous. It is often unknown what twist an exotic species will put on the environment until it is already established, which is too late. So, keep a sharp eye out for anything unusual because you never know what could be lurking beneath the water the next time you are out fishing or exploring.

Karen K. Aulwes is a fisheries technician for the department on the Upper Mississippi River at Guttenberg.

Old Tanks Meet New Standards

Article by Tom Collins
Photos by Ron Johnson

The last of the major deadlines to prevent leaks from underground storage tanks (USTs) came and went rather quietly. On December 22, 1998, all regulated USTs were required to meet new tank construction standards or be taken out of operation.

Perhaps you didn't hear about this in the news, or see anything different take place at the gas station or convenience store where you fill up. Most of us don't really give a lot of thought to what goes on underground when we pull up to a gas station. We may think about that first cup of coffee, a slice of

pizza or buying that Lotto ticket. Yet quietly, and gradually over 10 years, Iowa's underground storage tank owners have upgraded their systems to comply with stringent federal and state requirements. Iowa leads the nation with one of the highest upgrade compliance rates.

Gas stations are not like they used to be. What was once a fairly uncomplicated, straightforward and unregulated business is now technically demanding, highly regulated and continuously monitored. Tank owners have had to deal with deadlines since December 1988 when federal standards took effect. The rules address the legacy of contamination from tanks long out of business, the installation and operation of tanks, and activities necessary to prevent contamination.

The deadlines dealt with leak detection, insurance and upgrading tank systems.

- First, UST owners were required to conduct monthly leak detection on their tanks and piping to ensure no product was leaking into the soil and groundwater.
- Second, tank owners were required to have financial responsibility (insurance) to pay for corrective action, cleanup and third-party liability in case their system leaked.
- Finally, with the December 22, 1998 upgrade deadline, all tanks were required to protect against spills and overfills during tanker deliveries. Steel tanks had to be protected from the inevitable consequences of a hostile underground environment — corrosion.

In a way, the old contamination provided the link to future prevention as all those leaking tank sites revealed evidence of how tanks leaked, where they leaked and why. It was discovered tanks leak for four major reasons: 1) spills from emptying the contents of the tanker hose onto the ground during delivery; 2) overfills from not attending to the delivery process and making sure there's more room in the tank than product in the tanker; 3) corrosion holes in steel tanks caused by the moist underground environment; and 4) poor installation of the tank systems.

Three of the four problems could be addressed by upgrading the tank with special equipment. As for the fourth problem, the tank installation business is unforgiving, poor installers are no longer in business. Tank installers must be licensed and insured. That doesn't mean that mistakes don't happen, it just means a lot more is being done to prevent it.

> We have arrived at a major turning point in the brief, regulated history of underground storage tanks. All tanks — old and new — are now on equal footing.

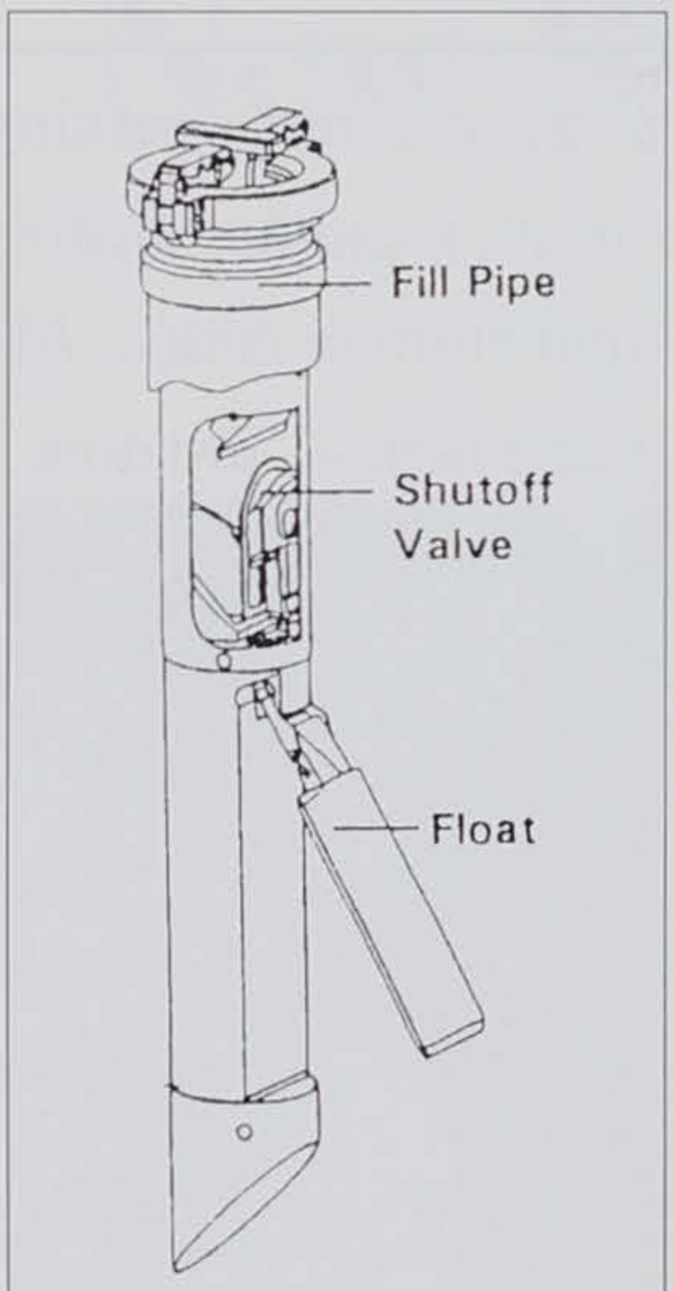
Leaks from underground storage tanks take their toll on the environment. One gallon of gasoline can pollute 10 million gallons of drinking water. Exposure to petroleum through contact, drinking or breathing vapors can adversely affect human health. Leaking UST systems can also drain the economic vitality of businesses due to continuous product loss and cleanup costs. Finally, contamination can negatively affect the value of a property for sale.

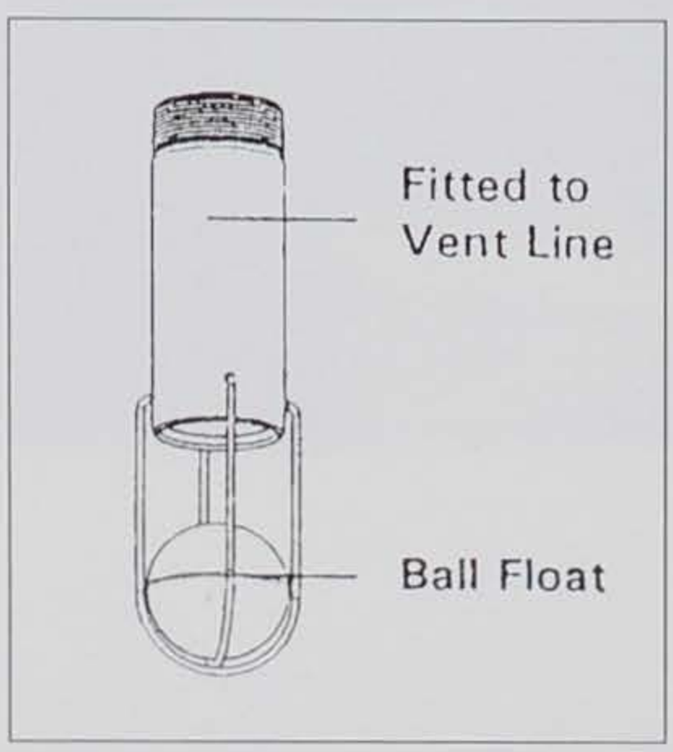
When you think about it, it's really pretty amazing existing tanks have been given ten years to comply with upgrade requirements when personal and environmental costs are so great. You can bet those owners whose tanks are in compliance will have no sympathy for those who don't make the deadline. Despite the urgency, owners needed time to make decisions, raise the money to pay for an upgrade, and comply with other new UST requirements.

Even after 10 years, not all tanks have met the deadline, but more than 95 percent have upgraded. Most of the non-upgraded tanks are at sites that don't sell gas. They instead use their tanks for fleet fueling. In most cases, these operations can switch to retail outlets for fuel.

A big reason why Iowa's compliance rate is one of the highest in the nation is

Two of the three options to prevent overfills are seen below, an automatic shut-off device (below) and the ball float valve (bottom). The other option is a high level alarm.





due to an earlier upgrade compliance deadline of the state UST Fund. To remain eligible for the state's cleanup fund and insurance program, UST systems were required to be upgraded, replaced or closed by January 1, 1995. The legislature then extended the deadline to meet the original December 22, 1998 deadline, but tacked on an $800 surcharge and double premium for all non-upgraded USTs. This was an added incentive for owners to get their tanks upgraded. In addition to the earlier upgrade deadline, DNR constantly reminded owners of the deadline with articles in newsletters, presentations around the state and mailings to non-upgraded sites.

So how are the new tank construction standards designed to protect soil and groundwater from a release? First, new steel tanks had to be protected from the harsh underground environment by a durable external coating and cathodic protection, a technique used to prevent corrosion or rusting of a metal surface. While the external coating might be enough to protect the tank, cathodic protection prevents corrosion of the exposed steel in those small areas where the coating becomes nicked or scratched during handling and installation.

Another option for new steel tanks is to "clad" them by bonding a thick layer of fiberglass-reinforced plastic or urethane to the tank's external surface without cathodic protection. Another type of steel tank has a noncorrodible outer tank and an inner steel tank (double-walled). The narrow space between the outer and inner tank is called the *interstitial space* and is monitored for leaks that may occur from the inner or outer wall.

For existing tanks, owners were given three options for corrosion protection: 1) add cathodic protection; 2) line the tank with a noncorrodible material such as fiberglass or epoxy, or 3) combine cathodic protection with interior lining.

That would address the major

Steel tanks need to be protected from the inevitable consequences of an underground environment — corrosion. These dime-size holes along the welded seam line of this tank were leaking petroleum product into the surrounding soil.

problem of releases from corrosion holes in steel tanks, but what about spills and overfills?

Spills and overfills are two other causes of contamination associated with delivery of fuel. When fuel is delivered to a service station, product flows from the tanker to the tank by gravity. If the delivery process is unattended and the tanker contains more fuel than the tank can hold, an overfill can occur. Fuel escapes from any loose joint at the top of the tank and runs into the soil and groundwater. Fuel also can shoot out the vent pipes and even blow off the delivery hose from the fill pipe.

Three options are included in overfill prevention: 1) an automatic shut-off device; 2) a high level alarm and; 3) a ball float valve. An automatic shut-off device (flapper valve) first slows the flow of fuel into the tank to alert the driver that the tank is nearly full. The driver can then close the delivery valve and have room for the product left in the delivery hose. If the driver does not pay attention and the fuel level rises higher, the float will close the valve completely so fuel can no longer flow into the tank.

A high level alarm uses probes installed in the tank to activate an alarm when the tank is either 90 percent full or within one minute of being overfilled. Either way, the alarm should provide enough time for the driver to close the truck's shut-off valve before an overfill happens. A final option is a ball float valve installed between the tank and vent pipe connection at the top of the tank. The ball floats on the fuel and rises with the product level. When the fuel level is 95 percent of the tank's capacity, the fuel pushes the float against the vent line. Seated against the vent pipe, the ball float prevents vapor from escaping out the vent and creates back pressure which greatly restricts the flow of fuel into the tank.

Spills occur when the delivery hose is disconnected from the tank. Normally the product flow should be turned off when the tank is 90 to 95 percent full and the amount of fuel in the hose (a couple gallons) can drain into the tank. However, if the delivery person is negligent and fills the tank, the fuel in the delivery hose spills outside the tank. Over the course of several deliveries, this can amount to a lot of spilled fuel.

To deal with spills, a catchment basin or spill bucket must be installed around the fill pipe. The basin must be corrosion resistant and hold at least five gallons. The basin is liquid tight to contain fuel spilled when the delivery hose is disconnected. The fuel in the bucket can be released back into the tank by a spring-loaded valve or emptied with a hand pump. Installing a catchment basin usually requires excavating to the top of the tank.

A lot more has taken place underground at petroleum facilities than most people are aware. Over the past 10 years, petroleum facilities have upgraded their sites to better protect Iowa's soil and groundwater. It doesn't mean there won't be leaking tanks in the future or that the tanks now operating are absolutely safe. It does mean new leaks from tanks will be minimal and any environmental impact greatly reduced.

We have arrived at a major turning point in the brief, regulated history of underground storage tanks. All tanks — old and new — are now on equal footing. They must all meet requirements to prevent contamination from spills, overfills and corrosion. Tank owners deserve praise not only in meeting the tank system upgrade deadline, but for helping Iowa lead the nation in protecting our environment.

Tank owners deserve praise not only in meeting the tank system upgrade deadline, but for helping Iowa lead the nation in protecting our environment.

Tom Collins is an environmental specialist for the department's underground storage tank section in Des Moines.

Hope is on the Horizon

by Jaime Edwards

Ron Johnson

Few things capture people's interest and enthusiasm more than wildlife and nature. Iowa's natural areas and wildlife populations provide a unique quality of life for many Iowans and attract increasing numbers of nonresident visitors each year. In fact, a 1996 national survey of fishing, hunting, and wildlife-associated recreation indicated 62.9 million Americans and 80 percent of Iowans participated in wildlife-associated recreation such as wildlife viewing, feeding and nature photography. Although public interest in wildlife education, conservation and outdoor recreation is rapidly increasing in Iowa and across the nation, funding for such activities has not kept pace with public demands. However, hope is on the horizon for nongame wildlife, and we have the Teaming With Wildlife coalition to thank for it.

Many of you are familiar with Teaming With Wildlife (TWW), the conservation initiative addressing the funding need for nongame. TWW proposes to establish a dedicated fund for state-based nongame wildlife conservation by creating a small user-fee on outdoor equipment. This user-fee approach could potentially raise $350 million annually for nongame conservation, education and recreation needs. For the past several years, Iowans have led the nation on this campaign, calling attention to the plight of nongame wildlife.

Despite the unprecedented 3,000-member national coalition, the TWW proposal encountered serious resistance among members of Congress because of the tax implications. So far, the coalition has been unable to get TWW formally introduced as a bill before Congress with the bipartisan support necessary to make it viable. This unparalleled coalition has, however, moved Congress to take a second look at current funding levels for nongame wildlife. As a result, both the House and Senate developed an alternative funding source and introduced separate bills during the last congressional session. These proposals, which have strong bipartisan support in both the House and Senate, could provide a proactive approach to nongame wildlife conservation — preventing species from becoming endangered and building a ne generation of wildlife stewards through education and recreation programs.

Nongame Funding Alternative

The new funding alternatives suggested by Congress would draw on a totally different funding source than TWW. These bills, known respectively the House and Senate as the Conservati and Reinvestment Act (CARA, H.R. 47 and the Reinvestment and Environment Restoration Act (RERA, S. 2566), woul dedicate a portion of federal income fro offshore oil and natural gas leases for a variety of purposes, including wildlife conservation, education and recreation. Though the House and Senate bills still need work and are a long way from fina passage through Congress, they could provide hundreds of millions of dollars annually for wildlife conservation programs.

Workings of Offshore Revenues

Under current law, approximately $3.5 to $5 billion in annual revenues fro offshore oil and gas leases goes to the Federal Treasury. The CARA and RER would dedicate 50 percent or more of these annual revenues — projected at $4.59 billion in the year 2000 — into three separate funds, or "titles." Under House and Senate bills, these revenues would be allocated under permanent budget authority and distributed as follows:

Title I: Outer Continental Shelf Impact Assistance — This section wou dedicate 27 percent of annual offshore o and gas revenue to coastal states and loc communities for impact assistance. Thi would include environmental remediatio or infrastructure needs associated with outer continental shelf activity off their coasts. Impact assistance funds could be used for such projects as air and water quality improvements, coastal zone management, beach replenishment and conservation of fish, wildlife and wetlan as well as for onshore infrastructure and

public service requirements. Title I is available to 30 "coastal" states including Great Lakes states.

Title II: State, Local and Urban Conservation and Recreation — This section would dedicate 23 percent in CARA (House) or 16 percent in RERA (Senate) of offshore oil and gas revenue for funding the Land and Water Conservation Fund and the Urban Park and Recreation Recovery Programs. These funds would be used for state, federal and local recreation and conservation projects.

Title III: Wildlife Conservation and Restoration — This section would dedicate 10 percent in CARA or 7 percent in RERA of offshore oil and gas revenue to fund state-level wildlife conservation, wildlife education and wildlife-associated recreation projects. This section encompasses most of TWW's goals.

What does this mean for Iowa?

If the House version of the bill is passed, Title III of CARA would provide Iowa with $7 million annually for nongame wildlife conservation. As an added bonus, CARA would make available to state and local parks an additional $6 million annually under Title II. If the Senate version of the bill is passed, the amount of revenue headed toward Iowa would be less, but still significant.

For more information, contact:

Iowa Wildlife Diversity Program, DNR
1436 255th St.
Boone, IA 50036
Tel (515) 432-2823
Fax (515) 432-2835
E-mail: wdiversity@aol.com
Web site: www.state.ia.us/wildlife

Teaming with Wildlife, c/o IAFWA
444 N. Capitol St, NW, Suite 544
Washington, DC 20001
Tel (202) 624-7890
Fax (202) 624-7891
E-mail: teaming@sso.org
Web site: www.teaming.com

Who and Where to write for House File 4717:

Honorable Don Young, Chair
1626 Longworth HOB
Washington, DC 20510
Don.Young@mail.house.gov

Rep. Jim Leach
2186 Rayburn HOB
Washington, DC 20515
talk2jim@mail.house.gov

Rep. Jim Nussle
303 Cannon HOB
Washington, DC 20515
nussleia@mail.house.gov

Rep. Leonard Boswell
1029 Longworth HOB
Washington, DC 20515
house.gov/boswell

Rep. Tom Latham
516 Cannon HOB
Washington, DC 20515
latham.ia05@mail.house.gov

Rep. Greg Ganske
1108 Longworth HOB
Washington, DC 20515
Rep.Gankse@mail.house.gov

Who and Where to write for Senate File 2566:

Honorable Mary Landrieu
702 Hart Senate Bldg.
Washington, DC 20515
senator@landrieu.senate.gov

Sen. Charles Grassley
731 Hart Senate Bldg.
Washington, DC 20510
chuck_grassley@grassley.senate.gov

Sen. Tom Harkin
135 Hart Senate Bldg.
Washington, DC 20510
tom_harkin@harkin.senate.gov

An alternative funding source is necessary to continue nongame recreation and education programs. Many of Iowa's wildlife viewing opportunities (Bald Eagle Days, bottom left) and reintroduction efforts (peregrine falcon, below) are sponsored by the DNR's Wildlife Diversity Program.

Ron Johnson

What you can do?

During the break before Congress reconvened on January 6, congressional staff were working on the bills — gaining additional co-sponsors and revamping wording of the bills to address concerns raised by constituents. It is expected the CARA and RERA will be reintroduced in the 106th Congress sometime in February. The bills will have new identifying numbers, so keep an eye out for this change. Now is the best time to write Congress regarding your support for or concerns about these bills. Contacting members of Congress now will likely result in CARA and RERA appearing on their agenda for 1999. It is imperative that the TWW coalition continues to push for specific changes that will strengthen the wildlife aspect (Title III) of each bill. There are three aspects of Title III needing clarification or changing in CARA and/or RERA. They are as follows:

Equal funding. The 7 percent expenditure of offshore oil and gas revenues for Title III in the Senate bill (RERA) must be raised to match the 10 percent called for in the House bill (CARA).

Emphasize nongame species. Currently, neither bill includes specific priority for funding nongame wildlife. Although both bills call for spending on "a broader array of wildlife," the specific priority of nongame wildlife is not stated. TWW never stipulated nongame wildlife should be the only beneficiary, but it should be clearly emphasized.

Public involvement. Both bills call for some level of "public involvement in the process of development and implementation" of wildlife programs. However, language on public participation needs further explanation, outlining what kinds of participation the states should pursue as part of fulfilling their obligations under the new legislation.

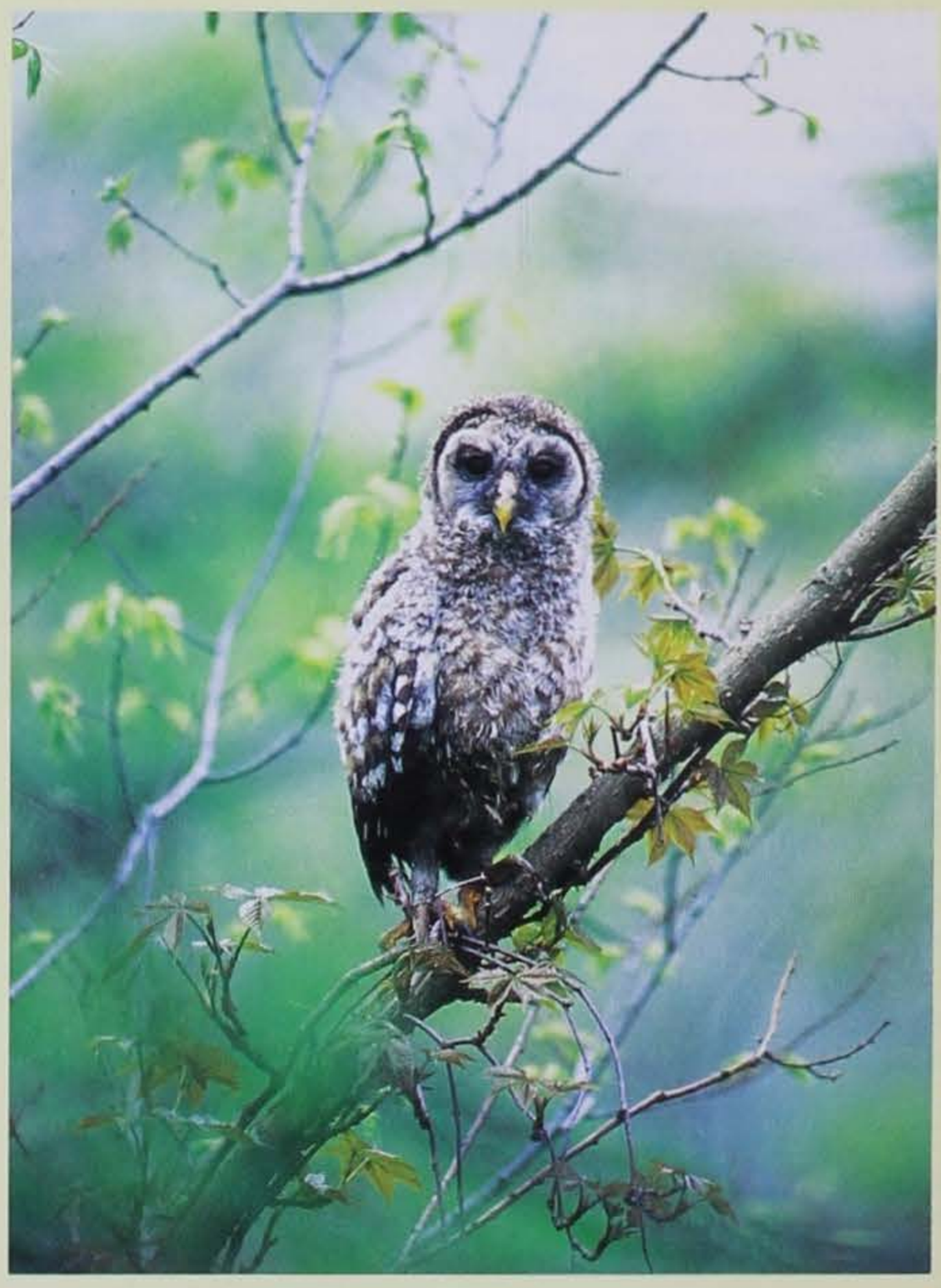
It is the vision, dedication and tenacity of the Teaming With Wildlife coalition that has carried us this far. It is clear the newly proposed legislation has been significantly influenced by the years of active involvement by the TWW coalition. While TWW's original vision of user-fee funding of conservation remains alive, the new proposals currently appear to offer a more viable funding option. However, there is still work to be done on shaping the legislation into a form that is as beneficial as possible for wildlife conservation. Strengthening current legislation is a high priority for the TWW coalition. To do this all of us must contact our members of Congress and the White House. Now is the time to raise awareness and brief Congress about these proposals and the importance of creating a dedicated fund for nongame wildlife conservation. Write letters and e-mails, meet with your congressional district staff and contact his/her Washington staff by phone. Let them know that CARA and RERA are a good start and encourage them to make the three modifications listed above. Feel free to add your own suggestions or changes to Titles I and II of the legislation as well.

Jamie Edwards is a biologist with the Wildlife Diversity Program in Boone.

Lend Us Your Support

Nongame Support Certificates, Poster and Postcards

For 20 years the DNR has produced nongame support certificates as a means of supplementing its nongame program. This year's certificate features a barred owl fledgling taken by photographer Roger Hill of Roland. The certificate is 8 1/2" by 11," with an image size of 5 3/4" by 7 3/4". To order your certificate, send $5 to the Department of Natural Resources, Wallace State Office Building, Des Moines, Iowa 50319.



Ty Smedes' brilliant photograph f a painted lady butterfly on a cup lant is the choice for the 1999 Wildlife Diversity oster. This year, wo postcards vere made with lifferent photo-raphs. One is nother selection rom the Smedes brary of a triking tiger wallowtail. The ther is a vivid photograph of a nonarch on rough blazing star aken by Don Poggensee of Ida rove.

Smedes grew up on a farm ust south of Granger, Iowa. He ow resides in Urbandale where e owns and operates Nature hotography. His lifelong inter-st in natural history led him to urchase his first 35mm camera n 1980. The use of telephoto enses, better film and improved echnique led to the initial ublication of Smedes' nature hotography in 1983. Since then, is work has been published by nore than 25 major magazines nd publishers. His photo credits nclude such magazines as The Nature Conservancy, Ducks Unlimited, The Iowa Conserva-ionist, Iowa Natural Heritage, Birds & Bloom, Outdoor Photogra-her, The Iowan, Brown Trout, Country Living and many others. Specializing in landscape, wildlife nd prairie wildflowers, Smedes lso loves to photograph Iowa eople and cultural events. He narkets his work both locally and ationally.

Smedes regularly teaches lasses in nature photography and s an experienced photo-tour leader. For more information about Smedes' Nature Photography classes or his work, contact him at 4732 72nd St., Urbandale, Iowa 50322 or (515) 270-9086. Don Poggensee can be contacted at Wind Rider Images, 174 Lakeview Dr., Ida Grove, Iowa 51445 or (712) 364-3491.

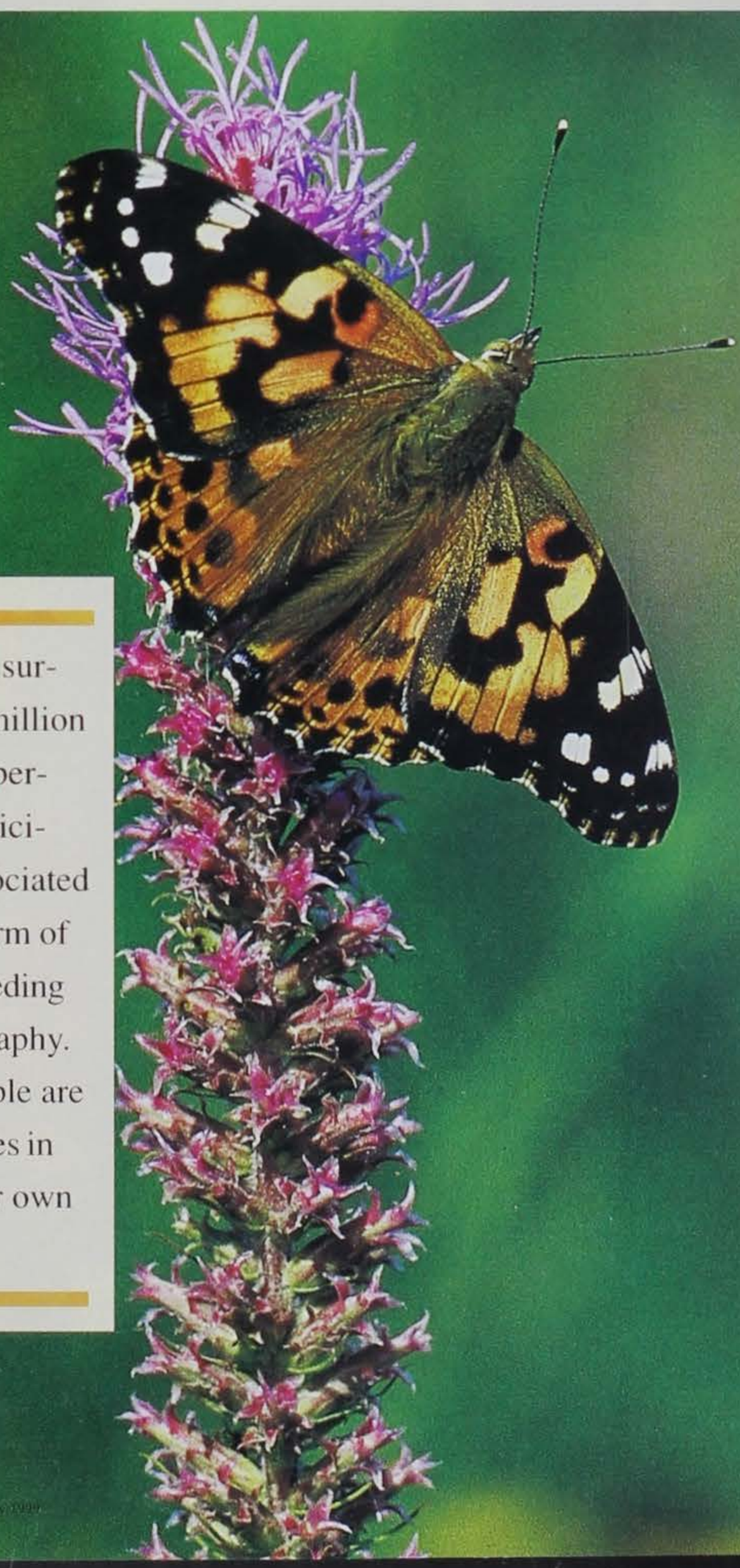
To obtain a poster or postcard, visit your local tax preparer or send a $5 donation to the Wildlife Diversity Program, 1436 255th St, Boone, Iowa 50036.

Ty Smedes

Don Poggensee

Ty Smedes

Attracting Backyard Wildlife



A 1996 national survey indicated 62.9 million Americans and 80 percent of Iowans participate in wildlife-associated recreation in the form of wildlife viewing, feeding and nature photography. Many of these people are doing these activities in the comfort of their own backyards.

Landscaping For Wildlife

Landscape your yard with realistic goals for attracting different wildlife species. Remember their four basic needs.

Ken Formanek

Roger A. Hill

Ken Formanek

The 4 Basic Needs of Wildlife

Wildlife have four basic needs for survival. If you keep the following needs in mind as you develop a landscape plan, success is sure to follow.

1. Food — Every species of wildlife has its own food requirements which often vary with age and season. Several types of food can easily be provided in your backyard habitat, including fleshy fruits such as berries and crabapples, hard seeds such as acorns and sunflowers, forage and browse plants like shrubs, grasses and flowers. Remember, if you want to view wildlife in your yard year-round, provide a variety of plants that produce food in all four seasons.

2. Water — Water is essential for all wildlife and should be provided year-round if possible. Because wildlife prefers moving water, it is best if the water source is dripping, splashing or misting. Standing water sources such as birdbaths and ponds are also acceptable. If using a birdbath, change the water regularly. During cold winter months, consider investing in a heater for your birdbath or pond.

3. Shelter — Shelter, or cover, is necessary for protection from predators and adverse weather. Shelter is critical during the breeding season when animals are trying to raise young or when animals are trying to rest or sleep. Ideal cover involves dense vegetation, such as vines or shrubs, and larger conifers, such as spruce or red cedar. Because conifers are not deciduous and remain green year-round, they are excellent for providing cover in all four seasons. Shelter can also be provided by structures such as rock and brush piles, and bird and bat houses.

4. Space — All wildlife species have different space or territorial requirements. For example, a pair of nesting bluebirds need about five acres of grassland with scattered trees (more space than a backyard can typically provide). In contrast, house wrens have small space requirements and a pair can easily be attracted to a small backyard.

Roger A. Hill

The basic needs of wildlife must be provided through all four seasons, with diversity and proper arrangement.

8 Principles of Landscaping for Wildlife

To attract backyard wildlife, a homeowner must apply landscaping principles beyond the scope of traditional landscaping criteria. The following eight principles will help make your yard an attractive place for wildlife to visit.

1. Provide the four basic needs of wildlife: food, water, shelter and space. To maximize wildlife viewing opportunities in your yard, provide wildlife with all their basic needs.

2. The function served by plants is more important than their appearance. Don't base your planting decisions solely on whether a plant is pretty. When determining what to plant, think about wildlife's four basic needs. Find out if a plant provides food (berries, nuts, nectar) or nesting cover.

3. To attract a variety of wildlife, a yard must have high plant diversity — both structural and vertical. Plant a variety of trees, shrubs, vines and flowers. Improve the structural diversity by erecting nest boxes, brushpiles and dust/grit feeders. Maximize vertical diversity by planting in "layers" with large trees, small trees, shrubs, grasses and flowers.

4. For year-round viewing, you must provide the four basic needs of wildlife through all four seasons. For example, nanking cherry provides summer fruits, mountain ash bears fruit in the fall and the American highbush cranberry provides fruits in the winter and spring. Year-round cover can be provided by many evergreens. And don't forget a reliable water source even in freezing weather!

Plants Valuable to Hummingbirds and Orioles

American columbine
Blazing star species
Cardinal flower
Coralberry
Daylily
*Delphinium species
Fireweed
*Hollyhock
Pale touch-me-not
Penstemon
*Scarlet runner
Pole bean
*Scarlet sage
Spotted jewelweed
Trumpet creeper
Turk's cap lily
Wood lily

**not native to the Midwest*

All plants listed are native to the Midwest or are cultivars of a species native to the Midwest.

Plants Valuable to Wildlife

Plant trees, shrubs and vines that provide food in addition to nest sites and protective cover. To view wildlife year-round, provide a mixture of plants that produce food and/or cover in different seasons. The following plants are categorized by seasons in which they provide the best wildlife values.

Fall and Winter
American bittersweet
American highbush cranberry
American mountain ash
Ash species
Black walnut
Common hackberry
Common winterberry
Coralberry
Crabapple species
Dogwood (Pagoda, Silky, Gray)
Eastern white pine
Hawthorn
Hickory species
Nannyberry
Oak species
Pasture rose
Red cedar
Smooth or staghorn sumac
Virginia creeper
White spruce
Yellow birch

Summer
American elderberry
American plum
Black or red raspberry
Blackberry
Black or pin cherry
Common or black chokecherry
Hazelnut
Ninebark
Riverbank grape
Serviceberry

5. Habitat components need to be properly arranged or interspersed to maximize the value to wildlife. Food, water and cover need to be close together. Wildlife prefer to feed near the safety and warmth offered by cover plants, such as evergreens and tall grass, or structures such as brushpiles. Use nature as a model — arrange plantings in clumps instead of rows.

6. Protect wildlife from unnecessary mortality by making your backyard a safe wildlife haven. Pet cats and dogs can have a devastating impact on backyard wildlife. Keep cats and dogs indoors or in kennels. Place falcon silhouettes or other visual obstructions near picture windows to reduce songbird collisions. Because some pesticides and herbicides are lethal to wildlife, and others eliminate insects that are a valuable food source for many wildlife species, limit or eliminate chemical applications in your yard.

7. Native plants provide optimal food and cover while perpetuating our state's natural heritage. Because native plants are adapted to the climate of an area, winterkill and drought are not a serious problem to long-term survival. In addition, native plants generally require minimal maintenance once established. In the Midwest, planting native prairie grasses and flowers has become very popular. These plants provide excellent cover for birds and attract hummingbirds and a variety of butterflies. Consult the DNR or a garden store for local sources of prairie seed or planting stock.

8. Match the vegetation you wish to plant with the proper soil type, soil acidity and the amount of sunlight available in your yard. Different plant species have different growing requirements. For example, hazelnut needs full sunlight and well-drained soils for optimal growing, while elderberry prefers partial shade with moist soils. Contact your local County Extension Service or a local garden store for advice on planting in different soil and sunlight conditions.

Related Publications on Landscaping for Wildlife

Landscaping for Wildlife. 1987. Minnesota Department of Natural Resources. 149 pgs. Minnesota's Book Store, 117 University Avenue, St. Paul, Minnesota 55155. ($10.95 plus $3 shipping and handling). Call 1-800-657-3757.

Attracting Backyard Wildlife. Iowa Department of Natural Resources. 23 pgs. Wildlife Diversity Program, 1436 255th St., Boone, Iowa 50036. ($1/booklet). Call (515) 432-2823.

How to Attract Birds. 1983. 96 pgs. Ortho Books. Available in book stores or at your local library.

Woodworking for Wildlife. 1992. 278 pgs. Minnesota DNR. See above address and phone number. ($9.95 plus $3 shipping and handling).

The Prairie Reader. Quarterly journal devoted to prairie restoration, gardening, preservation and ecology. To subscribe contact The Prairie Reader, P.O. Box 8227, St. Paul, MN 55108. ($18/year)

Backyard Butterflies. 1988. *Iowa Conservationist* 47: 18-19. See local library.

Landscape Plants That Attract Birds. 9pgs. ($2)

Managing Iowa Habitats: Attracting Birds to Your Yard. 12 pgs. ($0.75)

Shelves, Houses and Feeders for Birds and Mammals. 47pgs. ($1.50)

Bird Feeding: Tips for Beginners and Veterans. 11 pgs. ($1.50)

Gardening for Butterflies. Pamphlet. (free) This and above four publications available at Iowa State University Cooperative Extension Service, Ames, IA, 50011. Call (515) 294-5247

Bird Feeding

5 Ways to Double the Bird Species Visiting Your Feeders

1. **Provide food and water for the birds in all four seasons.** It is best if the water is dripping, splashing or misting in the summer and heated in the winter.
2. **Use at least 8 to 12 feeders placed in clusters of 2 to 3.** Include a variety of feeders designed for different birds.
3. **Provide protection from predators.** Place feeders in the open, at least 10 feet from surrounding trees and shrubs. Or, encircle the feeder with rabbit fencing (2-x-4-inch mesh, 30 inches high) to prevent ambush by cats and other predators. Keep your cat indoors.
4. **Provide protection from the elements.** Plant shrubs and trees (both coniferous and deciduous) throughout your yard. Include some fruit-bearing plants which may attract birds that do not readily use feeders.
5. **Clean feeders regularly with a mild bleach solution to prevent disease.** Also, rake or sweep seed hulls from under the feeder where mold and moisture will accumulate.

Ron Johnson

Seeds for Thought

• Bird watching is the fastest growing recreational activity in the U.S., up 155 percent

• Americans spend $625 million on birdseed annually, of which very little, if any, is reinvested in bird and habitat conservation.

• In 1991, birding activities provided more than 191,000 jobs and $5.2 billion in goods and services. Shouldn't we dedicate a portion to ensure the future of wildlife and the businesses that depend on it?

Plants Valuable to Butterflies and Moths

Two types of food are necessary for butterflies and moths — food for caterpillars and nectar sources for the adult. To attract a variety of butterflies and moths, provide both types of plants.

Caterpillar Plants
Aster species
Big and little bluestem
Birch species
Black-eyed Susan
Boxelder
Cherry species
Coralberry
Dill
Elm species
Hackberry
Hollyhock
Ironweed
Lupine
Milkweed species
Parsley
Rock cress
Carex species
Sedum species
Spicebush
Vetch species
Violets
Willow species

Nectar Plants
Apocynum species
Aster species
Black-eyed Susan
Blazing star species
Buddelia species
Butterflyweed
Fireweed
Goldenrod species
Joe-Pye-weed
Leadplant
Lilac
Lupine
Marigolds (old-fashioned variety)
Milkweed species
Phlox species
Plum species
Prairie thistle
Purple coneflower
Sedum species
Spirea species
Sunflower species
Sweet William
Wild bergamot
Yarrow

10 Top Foods for Midwestern Birds

1. **Black oil sunflower seed.** It provides high energy and is used by a wide variety of birds. Hands down, this seed is the best and should comprise 75-80 percent of all seed you provide birds.
2. **Peanuts, peanut butter and other nuts.** Nuts are very nutritious and an excellent choice to mix with black oil sunflowers. Try smearing some peanut butter on tree bark.
3. **Suet, suet cakes and deer ribs.** High energy and very nutritious for a wide variety of birds. Use predominantly from late fall to mid spring, the summer heat may make non-commercial suet melt or spoil.
4. **Niger thistle or finch mix.** Excellent for smaller birds.
5. **White proso millet and cracked corn.** Best used during spring and fall, limit use in summer and winter.
6. **Shelled and ear corn.**
7. **Safflower.** Good choice if you have problems with starlings, house sparrows and squirrels; they don't seem to like safflower seed.
8. **Apples, oranges, jelly and other sweets.** Very attractive to fruit- and berry-eaters during the spring, summer and fall.
9. **Mealworms.** Good source of protein for young birds. Offer from spring and through fall.
10. **Sugar water.** Offer to hummingbirds from spring through fall. Rule of thumb: begin feeding in late April and stop in early October.

1998 SEEDLING GUIDE

IOWA DNR STATE FOREST NURSERY

Call 1-800-865-2477 for availability and pricing.

Native Iowa Hardwoods

Silver Maple 50-80'. Does best on slightly moist to well-drained sites, but is adaptable to most sites. Prefers full sun, tolerates some shade. Autumn color yellow.

Green Ash 50-60'. Rapid grower. Does best on slightly moist to well-drained sites, but is generally adaptable to most sites. Requires full sun. Autumn color yellow.

White Ash 50-80'. Rapid grower. Does best on slightly moist to well-drained sites, but is generally adaptable to most sites. Prefers full sun, but can adapt to some shade. Autumn color purplish.

Black Walnut 50-75'. Does best on rich, deep, fertile, well-drained soils. Requires full sun.

Cottonwood 60-100'. Prefers moist conditions, but is adaptable to most sites. Prefers full sun.

Hybrid Cottonwood 50-75'. Prefers moist conditions, but is adaptable to most sites. Prefers full sun.

Hybrid Poplar 40-60'. Indifferent to soil conditions. Prefers full sun.

White Oak 50-80'. Does best on slightly moist to well-drained sites. Requires full sun. Autumn color purplish-red.

Swamp White Oak 50-60'. Adaptable to most soils, yet grows best in wet, swampy, acidic soils. Requires full sun. Autumn color reddish-bronze.

Bur Oak 60-80'. Adaptable to most soils. Requires full sun. Autumn color yellowish-brown to purplish.

Pin Oak 60-90'. Does best on moist or well-drained sites. Does best in full sun, but can handle some shade. Autumn color brilliant red.

Northern Red Oak 60-75'. Does best on moist or well-drained sites. Does best in full sun, but can handle some shade. Autumn color red to reddish-brown.

Mixed Oak 50-80'. Contains a mixture of various oaks including Red, White, Bur, Pin and Black in varying proportions. Adaptable to most sites. Requires full sun.

Black Willow 60-100'. Prefers moist conditions, streambanks and lake shores. Requires full sun.

Small Trees and Shrubs

Serviceberry 12-20'. Produces showy white flowers in the very early spring followed by purple fruit. Prefers moist to well-drained soils. Adaptable to either sun or shade.

Gray Dogwood 10-15'. Attractive shrub with creamy white flowers followed by white berries. Tolerates almost any location. Grows in moist or dry soils, in sun or shade.

Redosier Dogwood 10-15'. Attractive red stems with creamy white flowers followed by white berries. Tolerates almost any location, growing in moist or dry soils, in sun or shade.

Amur Honeysuckle 12-15'. Flowers white changing to yellow. Small red berry. Suitable for dry to well-drained sites. Tolerates shade.

Siberian Crabapple 20-30'. Clusters of white flowers with a tinge of pink. Produces red or yellowish berries in the fall. Requires well-drained conditions, not dry. Full sun to partial shade.

Ninebark 5-9'. Flowers in May and June, followed by numerous small red pods. Adaptable to moderately dry to moist sites. Requires full sun to partial shade.

Wild Plum 10-15'. Prefers rich, moist sites. Prefers full sun, but is adaptable to slight shade. White fragrant flowers in May and June followed by yellow to purple fruit.

Nanking Cherry 8-10'. Pink to white flowers followed by scarlet fruit in June. Prefers rich, moist sites. Prefers full sun, but is adaptable to slight shade.

Common Chokecherry 20-30'. Prefers rich, moist sites. Prefers full sun, but is adaptable to slight shade. Resembles black cherry but is smaller. Bears red fruit.

Common Purple Lilac 8-15'. Delicate, fragrant purple flowers in May. Prefers rich, well-drained sites and requires full sun.

Highbush Cranberry 8-12'. Showy flat clusters of white flowers followed by bright red berries that tend to hold on throughout the winter. Prefers deep, moist, well drained soils. Requires full sun to partial shade.

Evergreens

Eastern Red Cedar 40-50'. Adaptable to most sites that are moderately dry to moist. Requires full sun to partial shade. Tolerates poor, gravelly sites. Prefers airy sites. Very drought resistant. Dark blue berry-like fruit.

Norway Spruce 40-60'. Hardy. Does best on moist (potentially even swampy) to well-drained soils. Shade tolerant. Prefers cooler sites. Fastest growing spruce. Dense draping branches.

White Spruce 40-60'. Hardy. Does best in moist, well-drained, gravelly soils. Tolerates heat well. Medium growth rate. Tolerant of considerable shade.

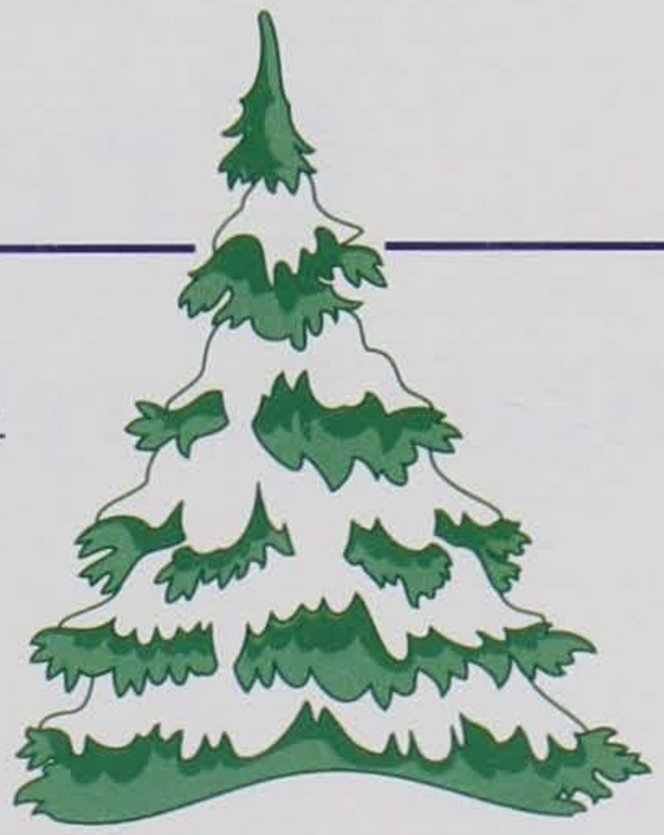
Jack Pine 30-50'. Especially hardy on dry, sandy soils. Adaptable to most well-drained soils. Somewhat open and loose appearing. Not a good lumber tree.

Ponderosa Pine 60-90'. Recommended for western Iowa only. Often damaged by needle diseases when planted in mass or windbreak type plantings. Prefers dry to well-drained sites. Full sun.

Red Pine 50-80'. Hardy, widely adaptable, but does best on well-drained soils. Red bark. Full sun, but does not tolerate hot dry winds — needs a cool, protected site.

Eastern White Pine 50-75'. Grows well in rich, moist soil, but does best in moist, sandy loams. Full sun to partial shade. Intolerant of air pollutants. Widely used for Christmas tree production.

Scotch Pine 30-60'. Hardy, widely adaptable, handsome tree with orange bark on younger trunks and branches. Used for Christmas tree production. Full sun.



Songbird Packets and Wildlife Packets will not be available this year.

Call 1-800-865-2477 for availability and pricing.

Visit our homepage @ http://www.state. ia.us/forestry

Parks Profile

DNR Photo

Iowa's Largest...

Brushy Creek

State Recreation Area

The Brushy Creek Recreation Area, at more than 6,000 acres, is the largest unit within Iowa's system of state parks and recreation areas. Visitors to the Brushy can truly get a sense of being "away from it all," as well as have opportunities to engage in a number of outdoor recreation activities throughout the year.

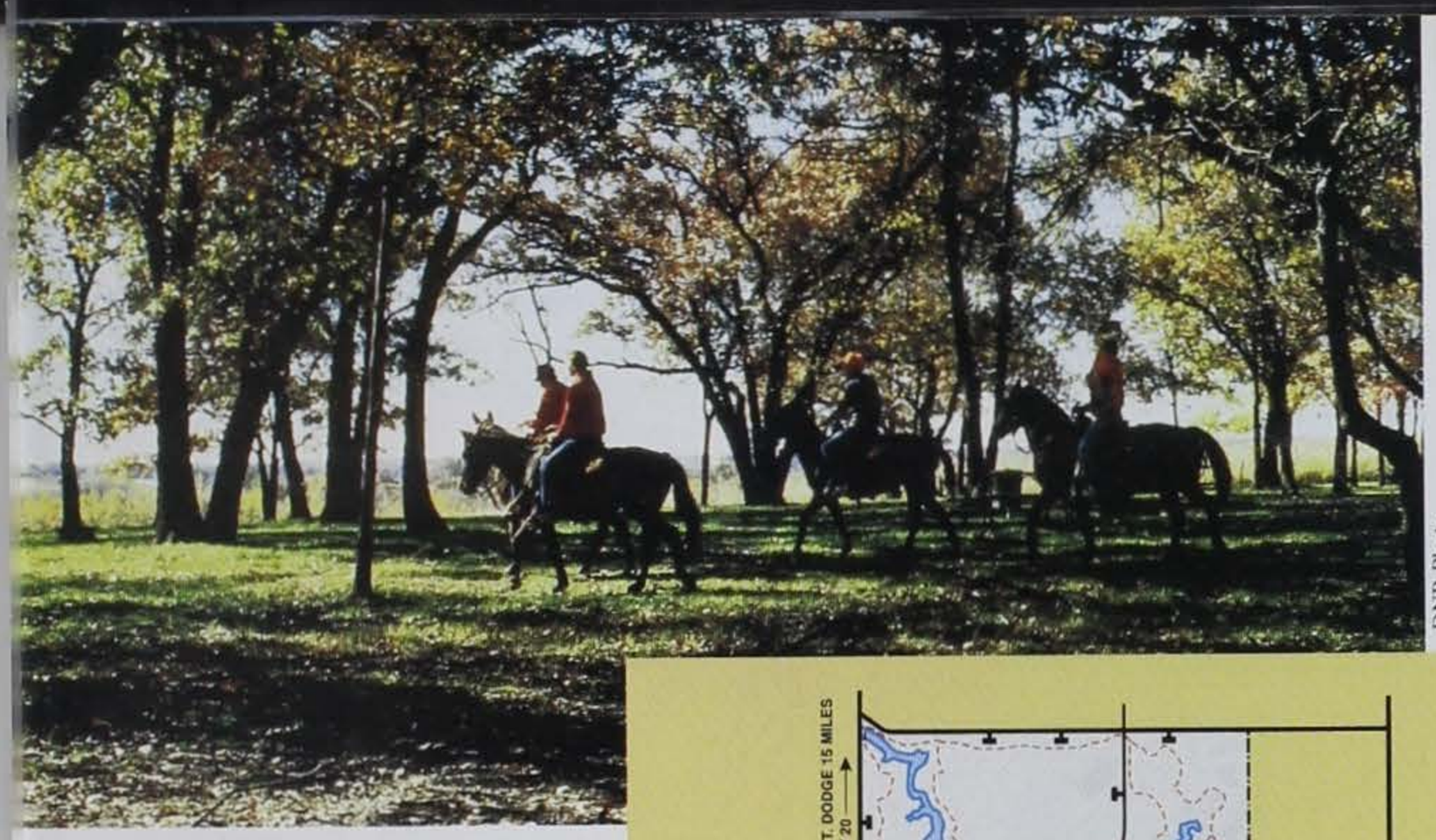
In August 1998, Brushy Creek Lake began to fill. The lake will eventually cover 690 acres and provide outstanding fishing, boating and swimming opportunities because of its excellent water quality and extensive system of fish habitat structures, jetties and bank protection.

In 1962, the Iowa Conservation Commission launched a study to identify those areas of the state where large recreational lakes should be constructed. One target area was the Ft. Dodge region. Subsequently, a suitable location was found along Brushy Creek, southeast of Ft. Dodge. The site was found to be ideal for the construction of a 1,000-acre lake with high water quality. Acquisition for the new state recreation area began in 1968. By 1975, 4,200 acres had been purchased, and over the next several years, a design for a 980-acre lake was completed as well as a master plan for extensive outdoor recreation facility development.

The land within the new recreation area contained a mosaic of unique natural resources that made the area worthy of protection. The lower Brushy Creek valley encompassed exceptional beauty, nationally significant archeological sites, habitat for a state-listed threatened species of vole, significant geological formations and mature forests (the 260-acre Brushy Creek State Preserve was dedicated in 1988).

Concerns over the effects of a large impoundment on the lower valley resulted in the preparation of an Environmental Impact Study, completed in 1982. The study examined the resources of the area as well as alternatives for development, including the construction of a smaller lake of 470 acres.

Further analysis had indicated that a 470-acre lake would not produce



DNR Photo

A new equestrian campground is being developed in the southern portion of Brushy Creek, complete with hitching rails, shower/rest rooms and playgrounds.

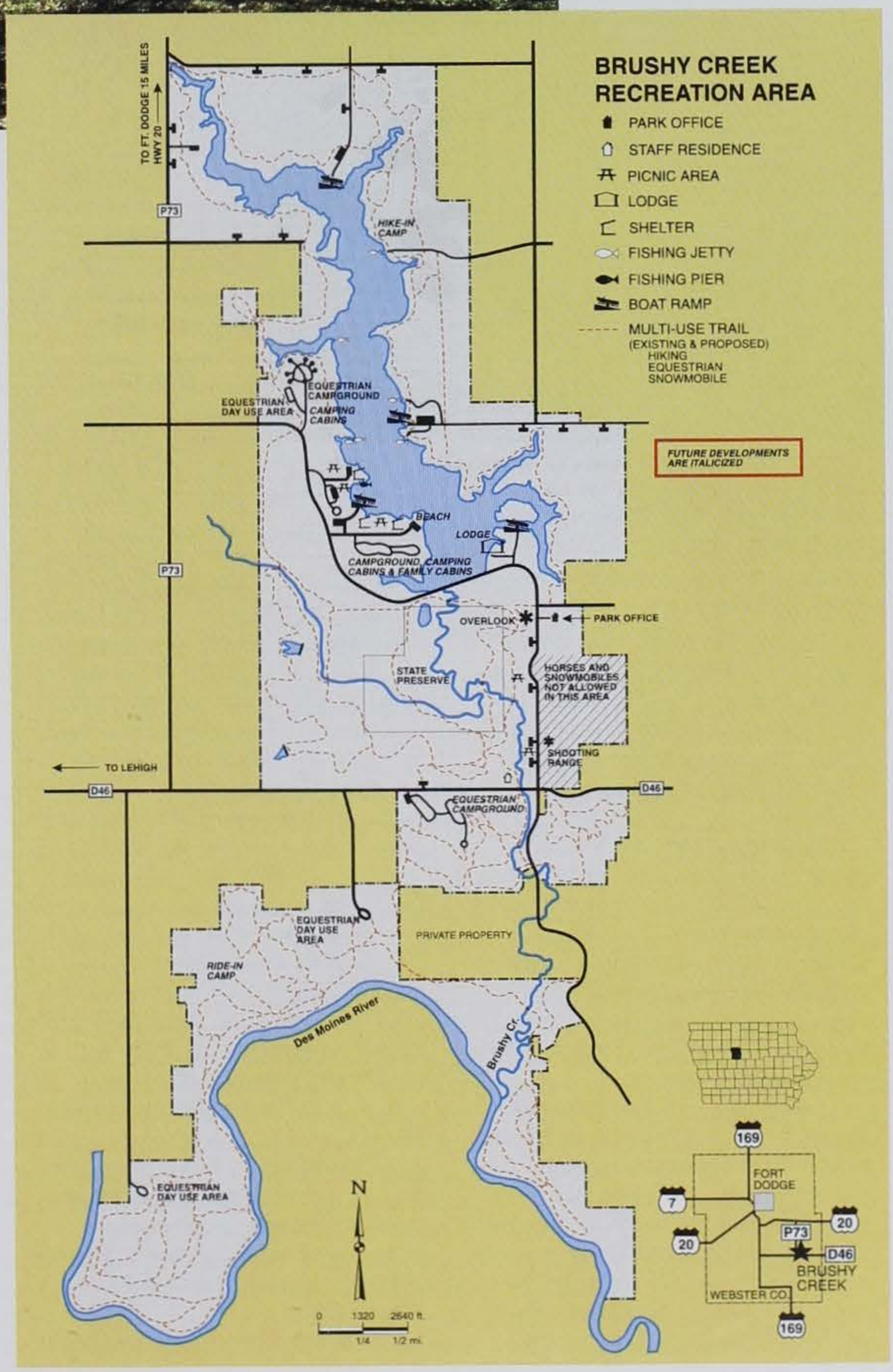
satisfactory water quality for long-term recreation and fishing benefits. In 1988, the Department of Natural Resources (successor to the Conservation Commission) modified the development plan to include a 690-acre lake. The 690-acre lake would have good water quality and not adversely affect the lower Brushy Creek valley. A second Environmental Impact Statement was prepared to ensure that environmental concerns were fully addressed.

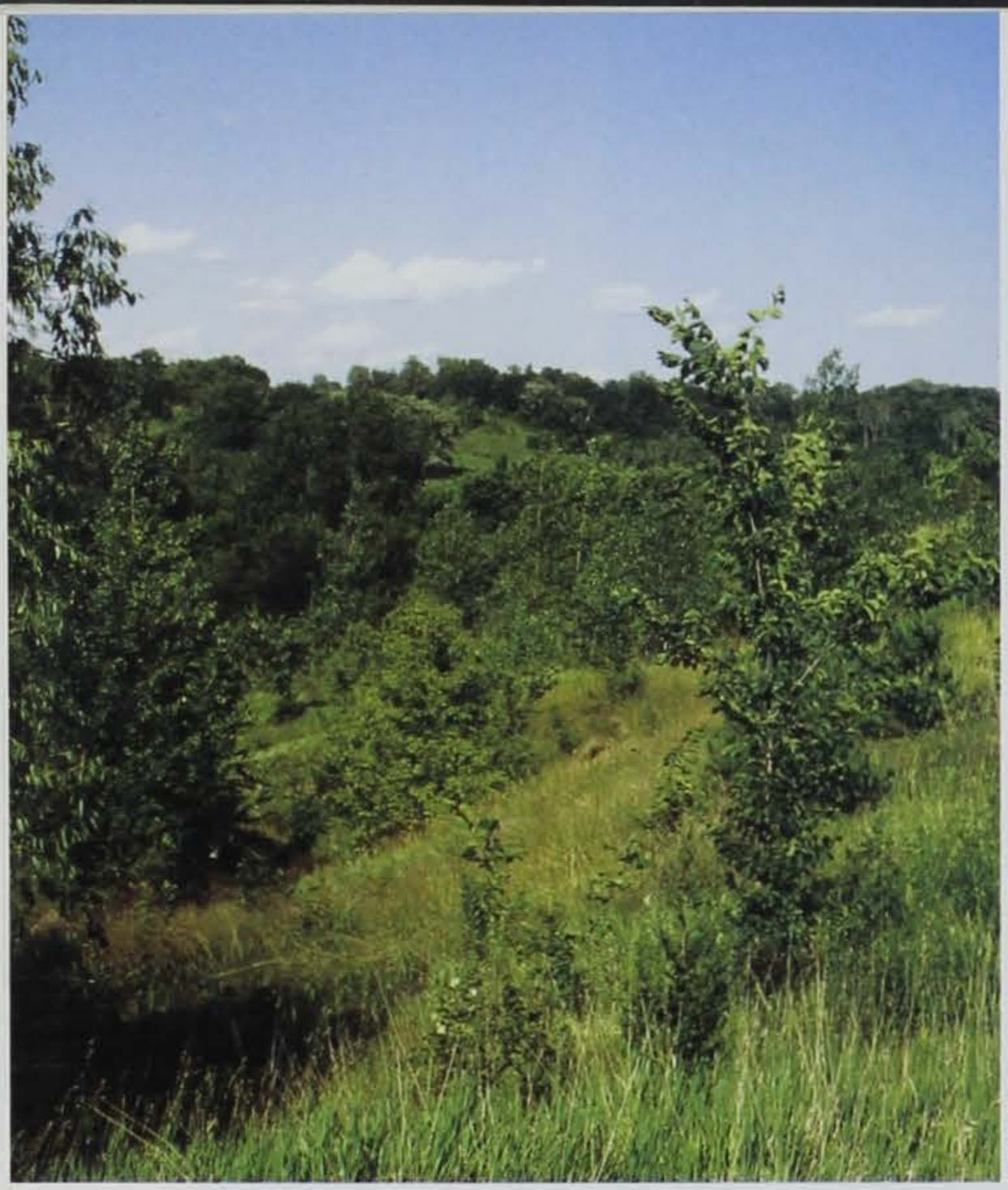
In 1989, the Iowa Legislature enacted landmark environmental resource legislation, including the Resource Enhancement and Protection program or REAP. The legislative package included funding of the 690-acre Brushy Creek Lake as well as the purchase of 1,750 additional acres of land located south of the original recreation area.

Construction of the Brushy Creek dam began in 1993 and was completed in August, 1998. Also during this period, outdoor recreation facility development accelerated at Brushy Creek, and is expected to be completed over the next several years.

Brushy Creek is currently a popular destination for both day and overnight use activities.

Trails — Brushy Creek's many miles of multi-use trails offer a variety of opportunities for hikers, horseback riders, snowmobilers and cross-country skiers. Mountain biking opportunities are also available. A mountain biking trail map is available at the information kiosk in the equestrian campground and at the park office.





DNR Photo

Brushy Creek's many miles of multi-use trails offer a variety of opportunities for hikers, horseback riders, snowmobilers and cross-country skiers.

Trail users are asked to call ahead (515/543-8298) for current trail conditions. Wet weather can require trails to be closed to minimize environmental damage. Trail users are also asked to stay on designated trails, respect the rights of other trail users and report any trail problems to the DNR staff.

Equestrian Day-Use Staging Areas — Presently, there are two day-use "staging" areas, one near the campground and the other in the southern portion of the park. Equestrian day-users are encouraged to use these facilities for parking and trailering. Seasonal rest room facilities are available at both areas.

Camping — The campground at Brushy Creek is considered one of the most modern equestrian campgrounds in the Midwest. The shaded campground, located just inside the west park entrance, features a modern shower and toilet building and 125 campsites, 50 of which have electrical hook-ups. Each site has a picnic table, fire ring and hitch rail. Drinking water hydrants, a horse washing area and a large riding arena are nearby. It is also available to campers without horses.

General Camping Information — Camping in Iowa state parks and recreation areas is on a "first-come, first served" basis. No reservations are accepted. Camping permits are available at the information kiosk located at the entrance to the existing campground.

Hunting — An active wildlife management program provides habitat and food for a variety of game and nongame wildlife. White-tailed deer and wild turkey are popular with hunters at Brushy, along with pheasants, rabbits and squirrels.

Many other areas of the recreation areas are scheduled to be improved and developed in the next few years. Day activities will include the following:

Boating and Fishing — Four boat ramps will offer convenient lake access. Boats will be restricted to a no-wake speed. High water quality, extensive fish habitat, fishing jetties and a handicapped accessible pier will provide great angling opportunities. A lake stocking program began in the fall of 1998. Primary species stocked include walleye, largemouth bass, smallmouth bass, muskie, red ear sunfish, crappie, channel catfish and bluegill.

Picknicking — Picnic areas near the lake with shelters and modern rest rooms will provide great places for gatherings of any size, whether a group of friends, large family reunion or a June wedding.

Swimming Beach — A large sand beach will provide swimming and volleyball opportunities. A concession building near the beach will offer refreshments, bait sales and boat rentals. Children will be entertained by a giant play structure near the beach.

Lodge — A lodge overlooking the lake with kitchen facilities and rest rooms will be constructed and available to groups for rental.

Paved Trail — A paved trail will connect the major recreation facilities, while many more miles of unpaved trails will provide access to most areas of Brushy Creek.

Equestrian Day-Use Areas — Additional equestrian day-use staging areas are being developed in the southern part of Brushy Creek. When completed, staging areas will offer rest room and picnic facilities.

In the future Brushy Creek will offer the following overnight opportunities:

Eight Rustic Camping Cabins — You will be able to stay in any of the camping cabins in the modern campground; or, tie your horses up and enjoy cabins in the northern equestrian campground. Camping cabins will have electricity and be located near the shower/rest room facilities.

Four Family Cabins — Year-round lodging will be available in these heated and air conditioned cabins nestled in the woods overlooking the lake. These two bedroom cabins have kitchens and bathrooms and sleep six.

Modern Campground — 96 pull-through and back-in sites, 62 with electricity and 10 with full hook-ups, will be available in the new modern campground. This campground will also have a playground and shower/rest room facilities.

Equestrian Campground — A new campground is being developed in the southern portion of the Brushy Creek Recreation Area. It will be complete with hitching rails, shower/rest rooms, a playground and 105 camp sites, with 76 electrical.

Hike-in and Ride-in Camp Areas — Pack up your things or load them onto your horse and ride or hike into two separate areas designed for camping away from it all.

Antler sheds: "Gifts of the Land"

Article and photos
by Pat Schlarbaum

It's the type of gray, late-winter day when the dust of earth collects on detritus and light is absorbed by leavings of winter. Branches are swelling with promise of new buds in a week or two, but today all seems gray and drab brown. The snow is mostly gone and is white no more. Only "snirt," a combination of snow and wind-blown dirt, remains. Such is a perfect day to roam about in pursuit of special gifts of the land from last year. Deer have been shedding their antlers and the glistening white tines can easily stand out lying on winter ground. Finding shed deer antlers is a great thrill and offers special moments outdoors.

A co-worker once observed a rather large buck traveling over land, its big rack gleaming in the wide open spaces. He slowed his vehicle to let it pass in front, hoping to count the tines. The buck leaped the fence and disappeared into the ditch, only to emerge at the roadbed sporting only one antler. Knowingly, he drove to the spot the buck had crossed, walked to the fence and picked up a nice 6 pointer – one of the more immediate finds to ever make a shed-antler hunter envious.

The annual growth cycle of a white-tailed deer's antlers begins soon after the old rack has been shed. Antler buds for the new rack start growing from the pedicels which are two permanent stumps of bone located on top of the buck's skull. A soft hairy skin, called "velvet," covers the antlers from the time they first appear as fuzzy knobs until they have reached full size. As the knobs grow in length, their velvet covering gives them a club-like appearance until the first fork appears. Growth is extremely fast, allowing the buck to produce his full rack in a few months.

By May, antlers will be readily visible and by August, most racks have reached full size. Three complete sets of arteries have provided nourishment for rapidly growing antlers. One set on the inside carries blood to the interior of growing bone that will become antlers. The second set is found on the outside beneath the velvet and the third is located in the velvet skin. It not only provides nourishment for the antlers but acts as a cooling system for deer. The maze of blood vessels in velvet acts as a bionic radiator, bringing the animal's body heat to the surface where it can escape. From June to August, bucks may be seen gently rubbing velvet-covered antlers against the insides of their hind legs, on their chests or on necks of other deer. Rubbing is believed to relieve itching and is done carefully, as if antlers are quite tender.

Three successive years of antlers collected from the same deer. The top set was collected when the animal was harvested.

In September, the buck's complex hormone balance changes as his body gets ready for breeding. The blood supply to his antlers is shut down and soft bone begins to harden beneath the velvet from base to tips. As antlers harden, ridges formed at the base mark former paths of arteries. When velvet loses its blood supply, it dries up and starts peeling away, creating a Spanish moss-like appearance. Bucks begin rubbing their antlers against stationary objects and shredding trees as large or larger than a man's wrist.

By the first of October, most bucks will have bare, polished antlers, ranging in color from dark reddish-brown to creamy yellow. Color is determined by the amount of staining from blood in the velvet and from juices in trees and plants upon which antlers were rubbed. As time passes, moisture and sunlight usually bleach antlers to a lighter color. During rut, or breeding season, tines of antlers are tooled to hardened, gleaming racks. Bucks then exhibit all royalty to other critters of the woods. Regally parading for mates, bucks use their racks in tremendous battles for territory.

The hormone testosterone keeps antlers firmly attached to the buck's head; however, when breeding season ends, production of the hormone stops. Bone at the base of each antler erodes or wears away and the rack is ready to be shed. At this time bucks may be seen shaking their heads back and forth in an attempt to dislodge antlers or rubbing them violently against trees or the ground. Bucks shed antlers from late December to late March, with most shedding occurring in February and March. Young bucks may be slower to drop antlers than mature bucks, but once a buck is fully grown, he normally drops antlers at the same time each year.

When bucks shed antlers, a slight amount of blood oozes from raw pedicels. Once the pedicels heal, new antler buds form and the buck is ready to grow next year's rack. The buck's pituitary gland, which is stimulated by increasing hours of

Practical Conservationist

daylight, starts the growing process.

By the time male whitetail fawns are six months old, small swellings of antler growth are present. Until their antlers become more visible, these young whitetails are usually known as "button bucks." Yearling bucks (1-1/2 years) require a lot of food energy to grow and develop healthy bodies, and only left-over energy can go into antler development. Often, yearling antlers are single spires, and are referred to as "spiked" bucks. However, when forage conditions are good, yearlings with forks or small six-point racks have formed.

The size of any buck's antlers depends on age, genetics and amount of good quality food he eats while his antlers are growing. Between the buck's second and third years, body growth slows and more of his food intake can be diverted into antler production. As a result, his second set of antlers usually is larger and has more tines (points) than his first. His third set should be even larger and the shape of the rack he will grow for the rest of his lifetime becomes apparent – either **wide**, **high** or **basket-shaped**.

As he ages, his main antler beams may thicken, the spread may widen somewhat, antler points may lengthen and more points may appear, but the basic shape of his rack will remain the same. This shape, as well as unusual characteristics such as drop tines, forked brow tines or forked main points, are hereditary.

A buck's age cannot be determined by counting antler tines, but size of the rack may provide a clue to the deer's age. Trophy-type antlers usually appear in a buck's fourth year, primarily because body growth begins to decline that year. The largest racks generally grow during the fifth and sixth years when the buck is in his prime. As he grows older, body condition begins to deteriorate, and size and quality of antlers may also decline.

There are two types of appendages that mammals possess: **antlers** or **horns**. Although both are growths that appear on the heads of various animals, *they are not alike*. Animals such as deer, elk, moose and caribou are members of the family Cervidae and have "antlers." Cervids shed and replace antlers annually. Large amounts of energy are expended to create, grow and solidify these works of art, an incredible feat of nature in a rather short time.

Conversely, mammals such as bison, sheep, mountain goats and cattle are in the family Bovidae. Bovids have "horns" that have a bony center, or core, that is permanently attached to the animal's skull. The outer sheath of horns is made of keratin, a substance also found in hooves, claws, hair, snake skins, bird beaks and many other animal parts. Horns continue to grow throughout the animal's lifetime and are **not** shed.

Pronghorn antelope are unique in that they posses a sheath around their horns that is shed annually, although unbranched horn cores are not shed and remain attached to the skull.

As a rule, caribou are the only female mammals that have antlers. Male caribou antlers are appreciatively larger. Antlered whitetail does occur, but the percentage of the population is considered minuscule and the condition aberrant.

Like morel mushrooms, shed-antlers are not found in any one specific location Areas where deer congregate (yard) during frigid weather, next to field margins and fences, near food plots and under cedar groves where a low branch may entangle and dislodge antlers prematurely, are good places to look for shed deer antlers. It's been said that when antlers are shed naturally, its match can be within 500 yards. Searching in ever-increasing concentric circles is a proven method of success. Also, when walking through a potential shed-antler site, pausing to look back over your shoulder can be effective. Viewing an area already searched with a different perspective can be rewarding. And lastly, chances of finding shed deer antlers are enhanced about 1,000 percent by being in deer country – one doesn't find too many while lying on the couch watching basketball games.

Wherever deer antlers are shed, mammals such as mice and squirrels are in search of antlers for the precious minerals they contain. Native people used antlers for tools and jewelry. They considered removal of an antler as a gift of the land and would return sacred tobacco to the site. For the modern conservationist that wants to give something back to the environment while enjoying and using one of nature's gifts, a suggestion would be to place a bit of mineral block where antlers are taken. Also, if the shed antler goes undetected, its minerals may one day provide soil nutrients to grow a plant that a buck will eat to provide nourishment for his growing antlers. Such are the cycles of nature.

After the four basic deer-hunting seasons (bow, muzzleloader, shotgun and bonus late seasons) are over, scouting an area for either a big buck or his shed antlers can be a very enjoyable and rewarding activity during winter. In a sense, deer season has taken on a ***fifth season***. Seeking illusive shed-antlers of deer can bring hours of outdoor activity and can tell us much about buck habits. The big one may still be out there, renewing a cycle of nature so important to Iowa woodlands.

Areas where deer congregtate, whether for protection or feeding, are the best places to look for shed antlers.

Pat Schlarbaum is a wildlife technician for the department's Wildlife Diversity Program in Boone.

How Many Can Come To Dinner?

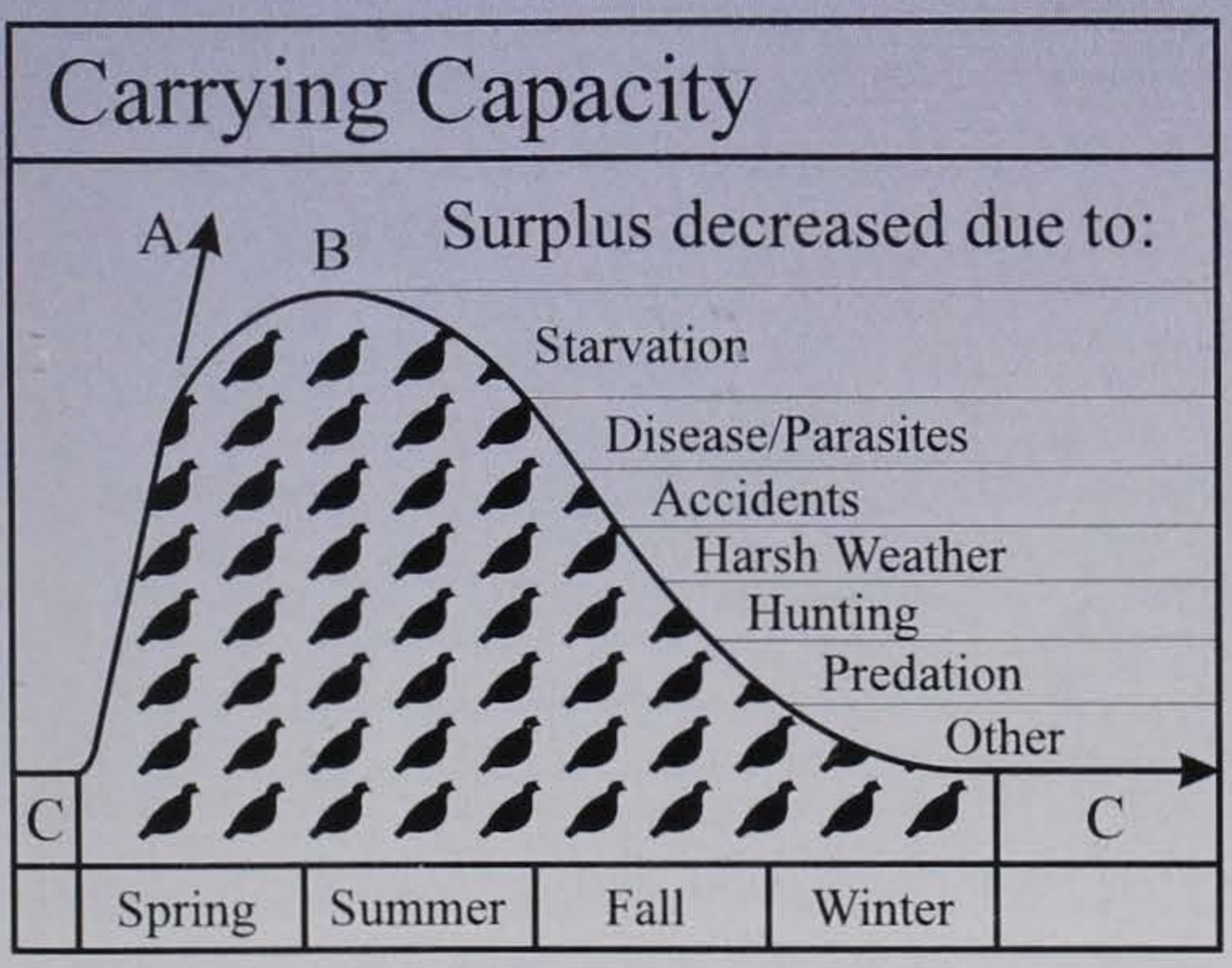
by Don Sievers

Background

Wildlife populations can fluctuated dramatically within a given year. Wildlife numbers are directly related to the quantity and quality of available habitat. The number of animals habitat can support throughout the year is known as the ***carrying capacity***.

All wildlife have certain requirements for survival, including food, shelter, water and living space. The carrying capacity is determined by the availability and arrangement of these requirements. When people alter the environment so one or more of these requirements are reduced or eliminated, wildlife numbers will decrease or disappear. One role of the wildlife manager is to develop and implement plans allowing for wise use of available ***habitat*** by people and wildlife.

Many wildlife species have young in spring, taking advantage of increased food produced within the habitat. Populations increase until food supplies decline. Throughout fall and winter, food supplies continue to decline while competition for food increases. Many wildlife populations reach their lowest numbers during the winter when food supplies are at their lowest and climatic conditions are most severe.



A Unrestricted production if no limiting factors existed
B Average yearly production
C Annual breeding stock

Carrying capacity of the land increases in early summer when there is a lot of food and cover. This healthy habitat is soon filled by the new animals. In late summer, when the population and the available food and cover reach their peak, some animals begin to die.

Age

Grades 3-6

Objectives

Students will be able to:

1. identify the carrying capacity of a simulated habitat based on food as a limiting factor; and
2. identify ways people alter the carrying capacity by changing the habitat.

Method

Students role-play as ***predators*** to determine the carrying capacity in a simulated habitat for coyotes.

Materials

One sheet of paper and pencil per student, one blindfold and 200 paper cups to simulate ***prey*** animals eaten by coyotes, are needed. Cups should be labeled as follows: 90 with **R** for rabbits, 40 with **M** for mice, 40 with **C** for carrion (dead animals), 20 with **S** for squirrels and 10 with **P** for pheasants. You may want to add cups using the same ratio for larger groups of students. The above numbers work best with a group of 12 to 15 students.

Classroom Corner

Extensions

1. Graph the total number of each prey species to show five of the most common animal foods eaten by coyotes in Iowa.

2. Have students identify local concerns which reduce wildlife habitat and complete a project that would increase the habitat for wildlife. Examples include planting shrubs for songbirds on the school grounds, or constructing and placing bluebird or wood duck houses in suitable habitats.

Resource Materials

The Wild Mammals of Missouri; Schwartz, Charles W. and Schwartz, Elizabeth R., University of Missouri Press, Missouri Department of Conservation; 1981

Population Parameters of Iowa Coyotes, An Analysis of Reported Livestock Losses; Boggess, Keith, masters thesis, ISU; 1975

Roger A. Hill

Don Sievers is a training officer with the department's Conservation Education Center in Guthrie County.

Procedure

1. Prior to beginning the activity, distribute the prey randomly over an available habitat.

2. Explain the concept of carrying capacity to the students. A gallon can with nail holes at one-inch intervals along the side is an excellent teaching aide. The can represents a habitat. The holes represent limiting factors (food, water, shelter and space) which prevent the can (habitat) from holding the maximum volume (carrying capacity) of water. Pour water into the can. The holes (limiting factors) must be plugged before the can (habitat) can hold its volume of water (carrying capacity).

3. Each student should write their name on a sheet of paper and place it along the boundary of the habitat area to identify their dent site.

4. Choose some of the students to represent coyotes and assign disabilities to them. For example, one coyote (student) was kicked by a white-tailed doe while trying to prey on her fawn. The coyote has a broken leg and limps. Another is blind as a result of being hit by a car and is blindfolded (have someone accompany the student to prevent injury). A third coyote must provide food for itself and two pups.

5. Students are to role-play as coyotes trying to gather enough food to survive for one month. Adult coyotes will require 45 pounds of food to survive while pups require 15 pounds each. Each student walks into the habitat (coyotes stalk their prey). When a student finds a prey they pick it up and deposit it back at their den. The students continue the process until the game is over, picking up only one prey per trip.

6. When all the prey have been gathered, the game is over. Each student should tally up the total weight of their prey to see if they survived. The weights of the prey animals are: rabbit -- 3 pounds; pheasant -- 3 pounds; squirrel -- 2 pounds; carrion -- 1-1/2 pounds; and mice -- 1 ounce. Do not tell the students how much the animals weigh until after all prey have been gathered or students will select for heavier animals during the game.

7. Discuss the following:

- How many coyotes survived? Was there enough food for all? If not, how many coyotes can live in this habitat: (The total weight of prey captured, divided by the pounds of food needed to survive equals the maximum carrying capacity.)
- How much food did the injured coyotes obtain? How much food did the coyote with pups obtain? If the coyote captured less food than was needed for both itself and the pups, who will survive? (The adult will survive.)
- In real situations, how would coyotes react to a food shortage? (In the real world, coyotes would use other foods that are available, compete with other coyotes for existing food by fighting or move to more suitable habitat.)
- If unable to find additional food, what might happen to the coyote? (The coyotes would suffer from disease and/or starvation.)
- Ask the students to identify ways people impact wildlife habitat. Would these impacts lead to an increase or decrease in the carrying capacity?

Conservation Update

DNR Goal: A Bald Eagle In Every County By 2010

With bald eagle recovery in Iowa far exceeding expectations, DNR biologists say it's time to think big.

"At the present rate of population expansion, and if water and habitat quality do not deteriorate further, we could see eagles nesting in all 99 counties by the year 2010," said Bruce Ehresman, a natural resource technician with the DNR. "I know this seems like an optimistic forecast, but the recovery of this magnificent species has been nothing short of incredible — so far."

Roger A. Hill

Ehresman bases his prediction on the soar in eagle numbers, most notably over the last decade. In 1977 there was only one documented eagle nest in Iowa, and only four by 1987. However, the number of eagle nests in the state jumped nearly fivefold from 11 in 1991 to 50 in 1996. A year later, there were 60 documented nests. This year, 82 were counted in 33 counties, and an 83rd has since been located. A Midwinter Bald Eagle Survey, performed in January, also documented 1,737 eagles, 264 more than the year before. Those figures — the number of nests and number of eagles — represent new records for Iowa.

Despite horrific windstorms that destroyed a number of eagle nests along with at least six young, 1998 still appears to be an excellent nesting year for Iowa eagles. To date, there have been 25 new nests reported, nine of which were documented in counties that did not report nests last year. The survey showed, of the 83 active eagle nests in Iowa, 46 fledged at least 80 eaglets this year. The outcome of another 14 active nests were unknown.

Records show since 1977 eagles have nested in 42 counties along 24 rivers and streams. Allamakee County in extreme northeast Iowa continues to be the bald eagle mecca. In fact, its 26 nesting pairs is more than two and one-half times the statewide goal of 10 pairs by 2000. Clayton County documented 10 nesting pairs, followed by Jackson County with five and Winneshiek County with four. The remaining 29 counties recorded from one to three nests.

Fishing Regulations, Resident Turkey Applications Available

The *1999 Iowa Fishing Regulations* brochure and the *1999 Resident Turkey Application* booklet are now available.

The fishing regulations brochure is a 32-page publication filled with information most used by Iowa anglers, including 1999 license fees, fishing seasons, and length and possession limits.

The deadline for submitting 1999 combination gun/bow turkey licenses is Feb. 5. If paid combination gun/bow licenses are still available after the first application period in any season or zone with a quota, a second application period will be held March 8-12. If all paid licenses for all zones and seasons with quotas are sold during the first application period, there will be no second application period. If this happens, no free or paid combination gun/bow applications will be accepted after the Feb. 5 deadline.

Turkey applications and fishing regulations are available at license vendors, county recorder's offices or by contacting the DNR at 515-281-HNTR.

DNR Grants Help Fund Recreational Facility Projects

Iowans will have more recreational opportunities thanks to $2.5 million in DNR grants aimed at constructing and improving locally owned and managed recreational facilities.

The Natural Resource Commission (NRC) in November approved 54 grant requests totaling $2.5 million. The cost-share grants cover up to one third of the total cost for each project, with grant applicants responsible for securing funding or donated materials or labor to cover the balance. The approved projects represent approximately $7.5 million in total project costs.

Funding for the grants is provided through the DNR's Recreation Infrastructure Grant (RIG) program. The selection committee reviewed and ranked the applications and narrowed its recommendation list to the highest ranking projects up to the $2.5 million spending cap.

Arnold Sohn, program administrator for the DNR's parks, recreation and preserves division, said the committee received 159 applications, with requests totaling approximately three times the available funds. The approved projects range from skate parks and pool renovation to trail bridges and recreational centers.

The Iowa Legislature during the 1998 General Assembly appropriated $2.5 million from the Vertical Infrastructure Fund for grants to cities, counties, organizations and associations to develop, repair, renovate or improve recreation infrastructures. The maximum grant allowed under the program was $100,000. Only nine of the 54 projects received the maximum grant allowance.

All projects approved for funding are required to have an agreement and funding in place by April 1, 1999, and the project initiated by July 1. All projects must be completed within one year unless granted an extension from the director of the DNR.

The DNR is already working on legislative proposals to extend the program for future years.

Conservation Update

Missouri Department of Conservation

Topeka Shiner Added To Endangered Species List

The U.S. Fish and Wildlife Service (USFWS), in December, designated the Topeka shiner endangered under the federal Endangered Species Act of 1973.

"Topeka shiner populations have declined by as much as 80 percent across the species' range," said Bill Hartwig, a regional director at the USFWS's regional office in Ft. Snelling, Minn. "Protection of the Endangered Species Act is needed now if we are to avoid extinction and help this fish recover."

Because of the federal designation, the Topeka shiner will be added to Iowa's endangered species list. "A long-standing cooperative agreement between the U.S. Fish and Wildlife Service and the Iowa DNR requires that Iowa's endangered and threatened species lists mirror those of the Service," said DNR spokesperson Michael Carrier. "Therefore, the federal listing compels Iowa to move ahead with its proposal to list the Topeka shiner as 'endangered.'"

The Topeka shiner is a small, stout minnow approximately 3 inches in length. It has a straw-colored back and scales edged in pigment, with silvery sides and a silvery-white underside. It has a distinct dark stripe along both sides.

Once common in small prairie streams throughout Kansas, Iowa, Minnesota, Missouri, Nebraska and South Dakota, the Topeka shiner is now primarily restricted to a few tributaries within the Missouri and Mississippi river basins. In Iowa, existing populations have been documented in the North Raccoon River watershed in Calhoun and Greene counties, the Little Rock River watershed in Osceola County and portions of the Des Moines River.

The USFWS attributes the Topeka shiner population decline to a variety of factors, including loss of habitat due to stream sedimentation and decreased water quality. Biologists also believe activities that remove or damage the natural protective vegetation buffer along streams, such as agricultural cropping, urban development and highway construction, may have contributed to the decline. Construction of dams on streams containing Topeka shiners has also eliminated the species from those streams.

Many of the remaining populations of the species have declined sharply and have become geographically isolated, eliminating the possibility for genetic transfer between populations. "Much of the loss of the Topeka shiner has occurred in the past 25 years," Hartwig said. "This is of concern because the shiner is an important indicator of the health of the aquatic ecosystem upon which all fish, wildlife and people depend."

Previously, the Topeka shiner was classified as a candidate for endangered species classification under which there is no protection for the species or its habitat. The Topeka shiner was added to the list following a 12-month period of extensive review of all available scientific and commercial information about the fish and a series of public hearings.

A species is deemed endangered if it is in danger of becoming extinct in the foreseeable future. Its listing under the Endangered Species Act protects the Topeka shiner from being taken, harassed, harmed, wounded, killed or collected.

As in the case with other federally listed species, the DNR's protection efforts will include sponsoring scientific research to determine the species' status and providing comments on construction projects that may affect known Topeka shiner habitat. Such recommendations may include requests for population surveys and avoidance of damaging impacts on previously identified Topeka shiner locations.

Junior Duck Stamp Design Contest Entries Due March 15

The U.S Fish & Wildlife Service announced entries for the 1999 Federal Junior Duck Stamp Program and Scholarship Competition are due March 15.

Entries must be horizontal, 9 inches by 12 inches, without a matte, glass, frame, cover sheet or border. No lettering, signatures or initials may appear on the front of the design. Art will be disqualified if any lettering appears on the front. An official entry form must be completed, signed and glued on the back of each entry. The contest is open to students in kindergarten through 12th grades attending public, private or home schools.

Entries are limited to North American ducks, geese or swans; or Hawaiian koloa, laysan duck or nene goose. Loons or mute swans are not eligible.

First place winners receive a $2,500 cash award and a trip to Washington, D.C., to attend the 1999 Federal Duck Stamp Contest.

The junior duck stamp program is designed to promote conservation education. Proceeds from the sale of junior duck stamps fund conservation education awards and scholarships to participants.

Entries must be postmarked no later than March 15 and submitted to Dave Aplin or Mary Franck at the Walnut Creek National Wildlife Refuge, 9981 Pacific Street, Prairie City, Iowa 50228; 515-994-3400.

Conservation Update

New Policies Make It Easier To Rent Facilities At State Parks

New policies adopted in 1998 will make it easier to rent facilities at state parks and recreation areas.

The changes, which went into effect Jan. 1, involve the rental of cabins, lodges and enclosed shelters and group camp rentals at state parks and recreation areas in Iowa, according to Sherry Baudler of the DNR's Parks, Recreation and Preserves Division. Baudler says the new reservation procedures should make it easier for users to rent facilities for their outdoor activities.

Effective this year, telephone and walk-in reservation requests will be accepted for all rental facilities the first business day after Jan. 1 of each year. Renters will also see a cost savings with the elimination of a non-refundable reservation fee previously required for all rental facilities. A reservation deposit will now be required for all cabin and group rental reservation requests, which will be applied to the rental fee charge. A $50 damage deposit for all rental units will be required when the renter arrives at the facility. The deposit is refundable if the rented facility is left undamaged.

Cabin rental payment must be made upon arrival at the park or recreation area and group camp rental fees will be required at the conclusion of camping when the area is ready to be vacated. Rental fees for enclosed shelters and lodges will be required when the rental request is made.

Changes have also been made to the cancellation policy. Those wishing to cancel a rental request must do so at least 30 days prior to the rental date to receive a full refund of the reservation deposit or any rental fee paid in advance. Under certain conditions, a refund may be granted for cancellations made less than 30 days before the rental date.

Copies of the new reservation policies are available by writing: DNR, Wallace State Office Building, 900 E. Grand, Des Moines, Iowa 50319.

USFWS Considering Removing Peregrine Falcon From Endangered Species List

The U.S. Fish and Wildlife Service is considering removing the peregrine falcon from the endangered species list due to its recovery across the country.

In an announcement late last year, U.S. Interior Secretary Bruce Babbitt called the peregrine falcon recovery in the Midwest "remarkable" and said the U.S. Fish and Wildlife Service was considering removing it from the endangered species list. Babbitt said recovery success in the Midwest is a sign of the bird's improving status across the country.

Midwestern peregrine numbers have rebounded from zero in the 1970s to 72 breeding pairs in 1997. Minnesota led the way with 22 breeding pairs, followed by Wisconsin with 12, Ohio with 11 and Indiana with eight. Iowa reported two breeding pairs.

Bringing peregrines back to the Midwest has been a labor of cooperation, dedication and passion to restore a species once near extinction. Academic and private groups joined with government agencies, including state wildlife agencies and the U.S. Fish and Wildlife Service, to develop recovery strategies to stop the decline of the bird and begin rebuilding its populations. Strategies included elimination of DDT in the environment and actual reintroduction of the species.

Among the leaders in peregrine falcon recovery in the upper Midwest has been the Raptor Center on the campus of the University of Minnesota in St. Paul. From 1981 to 1994, the center facilitated the reintroduction of 700 falcons in upper midwestern states, boosting recovery efforts throughout the region.

During the 1980s and early 1990s, it served as a peregrine clearinghouse and brokerage, matching available young birds with state wildlife agencies attempting to bolster populations through reintroduction. Today, it is the leader in collecting data on peregrines in the Midwest.

Sen. Freeman Joins National Wind Coordinating Committee

State Sen. Mary Lou Freeman recently became a member of the National Wind Coordinating Committee (NWCC). She was appointed by the National Conference of State Legislatures because of Iowa's strong wind resources and demonstrated interest in wind.

Freeman represents Senate District 5 and is serving her first full term in the Iowa Senate, where she serves as an Assistant Majority Leader. She is chair of the Transportation, Infrastructure and Capitals Appropriations Subcommittee and serves on several standing committees, including Natural Resources and Environment.

The NWCC identifies issues that affect wind power, establishes dialogue among key stakeholders and supports the development of a commercial market for wind power. NWCC members include representatives from electric utilities, state legislatures, state utility commissions, consumer advocacy offices, wind equipment suppliers and developers, green power marketers, environmental organizations and state and federal agencies.

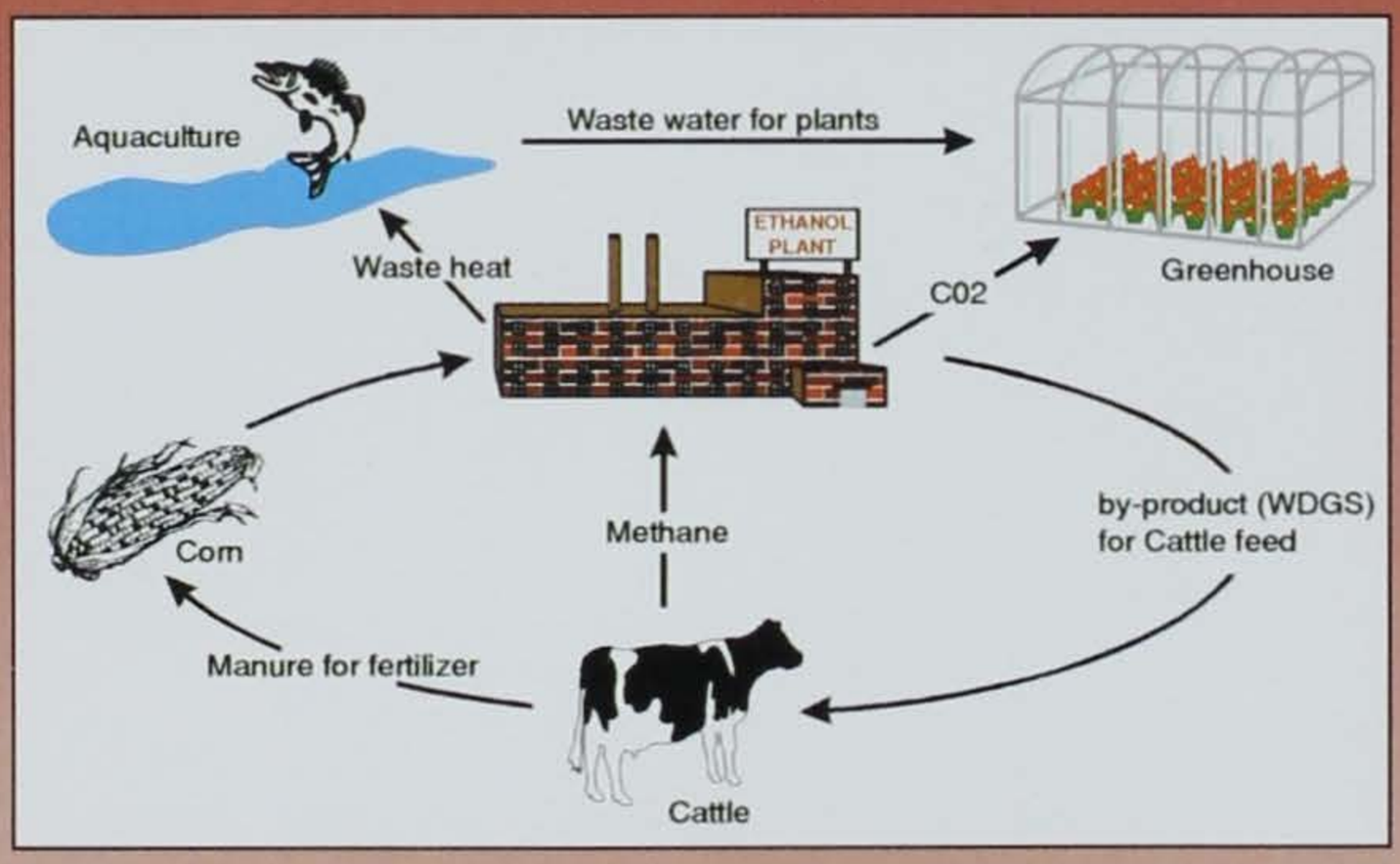
Program Introducing People To The Outdoors

A partnership between the STEP OUTSIDE program and the Iowa DNR is helping introduce people to the outdoors.

STEP OUTSIDE, a program developed by the National Shooting Sports Foundation, is designed to encourage outdoor enthusiasts to introduce friends and family to the outdoors through activities such as shooting, archery, hunting and fishing. The program gained support from the International Association of Fish and Wildlife Agencies during the organization's annual meeting in Savannah, Ga.

The Iowa DNR's Becoming an Outdoors Woman is just one program that has joined hands with STEP OUTSIDE to promote activities and events which introduce people to the outdoors.

Conservation Update



Computer Model Helps Farmers Evaluate Energy Benefits

Farmers can now evaluate homegrown energy benefits through a computer model of a hypothetical energy-producing farm. The program brings together farm activities that produce feedstocks for each other, especially energy production. Developed by the DNR and Sunrise Energy of Blairstown, Iowa, the model includes an economic feasibility study and business plan.

Model Provides Complete Data

The computer model allows a user to input a wide range of financial data regarding corn-to-ethanol production, cattle feedlot operation, methane digestion and aquaculture and greenhouse use. The various components of the energy farm may be examined as stand-alone operations, or as an integrated farm system. A user can also evaluate the economic potential of using different types of waste as feedstock. Spreadsheets can be generated on facility data, capital requirements, production costs and sales, revenue/expense projections, cash flow projections, depreciation, amortization, loan parameters and balance sheets.

Information obtained from the model is designed to be transferable to those considering energy production as part of their farm operation.

Ethanol is Center of System

The ethanol plant is the hub of the hypothetical system (see diagram above). The farm produces ethanol, waste heat used for aquaculture, carbon dioxide for the greenhouse and animal feed for cattle. Cattle manure is used to fertilize the corn grown to supply the ethanol plant. Methane from the manure is also used as a supplemental energy source at the ethanol plant, and wastewater from the aquaculture is used to water the plants in the greenhouse. Systems like the integrated energy farm can take economic advantage of waste materials by using them to create products with value.

How to Order

To receive a copy of the Integrated Energy Farm computer model, contact David Downing with the DNR at (515) 281-4876, or e-mail at ddownin@max.state.ia.us

For those interested in more detailed information, a manual is available for $20.

Consumer's Guide To Electricity Deregulation Available Through DNR

A free consumer's guide to understanding the issues of electricity deregulation is now available through the Iowa Department of Natural resources.

"Power to Choose – A Consumer's Guide To Electricity Deregulation," explains the core issues surrounding restructuring of the electric utility industry in the Midwest. The guide includes a description of what restructuring means, how deregulation could affect individuals and small businesses, important terms and more. It also provides key contacts from across the region.

The 24-page booklet is published by the United States Department of Energy's Chicago Regional Support Office. For a copy of the consumer's guide, contact Julie Tack, DNR information specialist, at (515) 281-8665; e-mail: jtack@max.state.ia.us

Committee Evaluating Effects Of Utility Restructuring On Residential Customers

A committee established by the Iowa Legislature to study utility deregulation held its first meetings in October and November.

The Deregulation and Restructuring of the Electric Utility Industry Committee will evaluate potential effects of utility restructuring on commercial and residential customers. Committee members will also review the legislative actions of other states and develop recommendations for Iowa.

Committee members include Sen. John Jensen (co-chair), Rep. Chris Rants (co-chair), Sen. Patrick Deluhery, Sen. Michael Gronstal, Sen. Nel Schuerer, Rep. Clyde Bradley, Rep. William Brand, Rep. Kay Chapman and Rep. Janet Metcalf.

Conservation Update

Turkeys were numerous during early settlement, so numerous in fact, that settlers named landmarks such as the Turkey River after the abundant, big birds. However, due to habitat loss and unregulated hunting, numbers plummeted and in 1910, the last turkey was seen in Lucas County.

In 1965, restoration efforts revived Iowa's wild turkey population with an initial release of 11 eastern wild turkeys from Missouri into Shimek State Forest. This flock flourished and numbered between 400 and 500 by 1974. Similar releases were made around the state and today wild turkey numbers are estimated at 100,000 to 130,000 birds statewide, with 95 percent of the suitable habitat occupied by the birds. Nationally there are approximately 4.5 million birds occupying a larger range than their original distribution.

This is a huge success story for wildlife management, with many people and organizations to credit for the comeback of the wild turkey to Iowa. One organization that has been instrumental in the successful reestablishment of the wild turkey is the National Wild Turkey Federation (NWTF). The NWTF is dedicated to the conservation of wild turkeys and the preservation of the turkey hunting tradition. Through its 180,000 members in 50 states and 11 foreign countries, the NWTF organization, with 1,050 chapters, completes projects related to its mission. Since 1977, the NWTF has spent $81.4 million on 7,813 projects, including habitat management, education, hunter safety, restoration, research, enforcement and land acquisition.

Turkey hunting is relatively new to Iowa – the first season was held in 1974 – and has grown in popularity ever since. The popularity of the NWTF has grown along with the popularity of turkey hunting. Iowa has 33 chapters with a total membership of 4,800. Iowa's chapters hold banquets and special events that allow individuals the opportunity to get involved in wildlife conservation. To become involved contact your local chapter or the numbers and addresses below:

NWTF Regional Director: Dave Whittlesey - (515) 342-2500

National Wild Turkey Federation
770 Augusta Road
Edgefield, SC 29824
Phone (803) 637 - 3106
Fax (803) 637 - 0034
e - mail: NWTF@gabn.net
web site: http://www.nwtf.org.

Upcoming NRC and EPC Meetings

The dates and locations have been set for the following meetings of the Natural Resource Commission and Environmental Protection Commission of the Iowa Department of Natural Resources.

Agendas for these meetings are set approximately 10 days prior to the scheduled meeting date. For additional information, contact the Iowa Department of Natural Resources, Wallace State Office Building, Des Moines, Iowa 50319-0034.

Natural Resource Commission:

— January
No meeting
— February 11
Des Moines
— March 11
Des Moines
— April
No meeting
— May 13
Wapello
— June 10
West Union
— July
No meeting

Environmental Protection Commission:

— January 19
Des Moines
— February 15
Des Moines
— March 15
Des Moines
— April 19
Des Moines
— May 17
Des Moines
— June 21
Des Moines
— July 19
Des Moines

The Last Warden's Diary

Well, this may be the last one. I hate to leave. But, as of this writing, I can neither confirm nor deny I am a candidate for the position of head coach at the University of Iowa following the retirement of Hayden Fry. I am waiting for a call from Athletic Director Bob Bowlsby as I write, and it would not be proper for me to discuss...RRRIIIIINNNGGG! Just a minute, let me get the phone.

Yes, Bob? Yes, did you get my application.....? Oh, you hired a guy? Oh, I thought after that dude from Florida.....well, can this Ferentz guy use an assistant? Am I qualified? Hey, read my application. I scored a touchdown in the seventh grade! Of course I know it was from only one yard out. My senior year? Hey, it was a rebuilding year! I think I could bring a lot to the program...what? You'll consider me when there are snowballs in where? OK, I understand, well, Bob, what about basketball? I hear Tom Davis is leaving...CLICK! Hello, Bob? Bob? Are you there? Hmmm. Well, guess it's back to work here. I wouldn't have accepted anyway. Just testing the waters.

The manhunt for a coach and the winter season reminds me of the snowmobile manhunt.

In the northern parts of the state, we spend a lot of time on the frozen waters and trails checking ice fishing shacks and other snowmobilers. Before you venture out, it's a good time to be sure your snowmobile is in good working order, your required safety equipment is in place and your registration is current.

Operate safely

An accident can happen so easily, before you know it, in the simplest of circumstances. Once, I was patrolling on the Iowa River with Dave Tierney. Snowmobiles were buzzing up and down the ice all over the place. We had traveled from Marshalltown about to the Hardin County line and were returning. To exit the river, we had to get up the riverbank at a point under a bridge.

Getting up a riverbank requires a little bit of speed, otherwise you slide backwards down the bank, or worse, you slide sideways and roll down the bank. Dave had glided up the bank and was moving up the trail, so I made a circle to the center of the river and made a run at the riverbank.

All was going well until my ski got caught in a rut I didn't see. There were several snowmobilers in the area and I'm sure it was impressive to watch. My snowmobile flew up the riverbank, the ski hit the rut, and it was like a hand had just reached out and grabbed the sled. It stopped, but I kept flying. I did a complete somersault over the windshield and into a snowbank, landing on my head with snow flying everywhere. I lay there on my back, my snowmobile behind me with the left ski crumpled like a pretzel. I expected people to hold up signs reading 5.5, 5.6, 6, 6. Dave noticed I was missing and returned, looking down at me.

"What are you doing?" he asked.

"My rear end is tired from riding, I decided to lie down and rest, can't you see?"

"What happened to your sled?"

"Factory defect. Let's go find a cup of hot coffee."

We pounded out the ski as close as we could to straight, pushed the snowmobile to the top, started it and continued. Glad I was wearing a helmet because I was airborne before I knew it. Just that quickly it can happen.

One time I gathered up helmet and snowmobile suit in a hurry as the sheriff's department called asking me to help and to bring my snowmobile. A deputy had been in pursuit of a carload of theft suspects, and all the occupants had decided to bail out of the car in an attempt to escape on foot. Yes – in winter – with temperatures in the teens. No – that isn't too smart.

I trailered up my snowmobile and drove to the area. Other deputies and state troopers had arrived, cordoning off an area. A command post was set up at an intersection by a pine grove.

We followed a set of tracks and I covered the fencelines and sloughs by snowmobile. Man, this guy had to be cold because it was one of those teeth-chattering days, and it had been a few hours since they had left their car. Our search mostly came to dead ends, so we all decided to take a break and warm up.

I went back to the command post where a deputy friend of mine rolled up in his squad. He was bundled up in a green insulated suit and still shivering, as were all of us. Another car pulled into the intersection, and the call went out, "coffee and donuts guys." We were standing there planning what to do next when all of a sudden there was a loud rustling of snow and branches in the grove, followed by a "plop" into the snow. We ran into the grove. There was a young man in the snow, wearing only a shirt and jeans, half frozen. He was handcuffed and taken to a car.

"What were you doing?" we asked.

"Well," he answered, "After I ran, I climbed a tree last night. It was freezing. I was watching you look for us, and I thought I would climb down after you all left. But, after I saw you cops bring out coffee and donuts, I knew you would be standing there a long time, so I decided to give up!"

It's like fishing, you never know what will become good bait.

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by Chuck Humeston

Parting Glance

Roger A. Hill

“Here's lookin’ at you kid.”